

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN**

DINA M. BADAGLIACCO,	:	
individually and on behalf of all	:	
others similarly situated,	:	Case No.
	:	
Plaintiff,	:	
v.	:	JURY TRIAL DEMANDED
	:	
	:	
FORD MOTOR COMPANY, a	:	
Delaware Corporation; ROBERT	:	
BOSCH GMBH, a Corporation	:	
organized under the Laws of	:	
Germany; and ROBERT BOSCH	:	
LLC, a Delaware Limited Liability	:	
Company,	:	
	:	
Defendants.	:	
	:	

CLASS ACTION COMPLAINT

Plaintiff, Dina M. Badagliacco, individually and on behalf of all others similarly situated (the “Class”), alleges the following based upon the investigation of counsel:

I. INTRODUCTION

1. Plaintiff brings this class action involving the Ford F-250, F-350 and F-450 “Super Duty” vehicles with 6.7-liter Power Stroke diesel engines. These vehicles have an illegal software algorithm – a “defeat device” – that cheats federal and state emission testing for nitrogen oxide (NOx). The device “defeats” the

vehicle's emissions controls in certain situations during real-world driving but activating its emissions control system only when the vehicle is being tested.

2. This diesel engine was marketed and promoted as the "Cleanest Super Diesel Ever"; that it used "proven technology and innovative Ford strategies to meet the latest federal emissions standards"; and that it reduced NOx by 80% over previous models. Ford also claimed that these "Super Duty" vehicles were "best-in-class" with respect to fuel economy and that they were the "most tested Power Stroke diesel engine ever."

3. This is not what Ford delivered. These Super Duty vehicles emit levels of NOx many times higher than (i) their gasoline counterparts; (ii) what a reasonable consumer would expect; (iii) what Ford had advertised; (iv) the EPA's maximum standards; and (v) the levels set for the vehicles to obtain a certificate of compliance, which allows them to be sold in the United States. Further, the vehicles' promised power, fuel economy and efficiency, and towing capacity is obtained only by turning off or turning down emission controls when the software in these vehicles senses that they are not in an emissions testing environment.

4. In the last several years, there have been major scandals involving diesel vehicles made by Volkswagen, Audi, Porsche, Mercedes, and Fiat Chrysler Automobiles (FCA). Volkswagen has pled guilty to criminal violations of the Clean Air Act, Mercedes is under investigation by the Department of Justice, and

FCA has been sued by the EPA for violating the Clean Air Act for improper emissions in tens of thousands of 2014–2016 Dodge Ram 1500 and Jeep Grand Cherokee EcoDiesels. Additionally, General Motors is the subject of a lawsuit concerning the emissions of its Silverado and Sierra trucks. The diesel vehicles made by these manufacturers evade emissions standards with the help of certain software that turns off or turns down emission controls when the vehicles sense that they are not in a test environment.

5. Ford's top selling Super Duty vehicles often emit far more pollution on the road than in the emissions-certification testing environment. These vehicles exceed federal and state emission standards and employ “defeat devices” to turn down the emission controls when each vehicle senses that it is not in the certification test cycle. A defeat device means an auxiliary emission control device that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use. In modern vehicles with electronic engine controls, defeat devices are almost always activated by illegal software in the vehicle’s engine control module (ECM)—the computer that controls the operation of the engine and emission control devices.

6. Increased sales, and thus increased profits, drove Ford to use at least a defeat device in its Super Duty diesel engines. By reversing the traditional order of

the exhaust treatment components and putting the selective catalytic reduction (SCR) in front of the diesel particulate filter (DPF), Ford could obtain and market higher power and fuel efficiency from its engines while still passing the cold-start emissions certification tests. This made Ford's trucks more appealing and competitive in the marketplace, driving up sales and profits. But the reordering would have also drastically increased the need to employ Active Regeneration (i.e., burning off collected soot at a high temperature) and other power- and efficiency-sapping exhaust treatment measures, reversing the very advantage gained. Ford's solution, with the participation of Defendants Robert Bosch GmbH and Robert Bosch LLC, was to install defeat devices to purposefully reduce in-cylinder NOx controls, EGR effectiveness, and SCR dosing, thus increasing NOx emissions and decreasing the need for Active Regeneration. It could gain the advantage of hot exhaust going into the SCR system, needed to pass cold-start tests, while avoiding the fuel- and power-robbing Active Regeneration procedure that the DPF requires when the SCR treatment comes first.

7. Diesel engines pose a challenge to the environment because they have an inherent trade-off between power, fuel efficiency, and emissions. Compared to gasoline engines, diesel engines generally produce greater torque, low-end power, better drivability, and much higher fuel efficiency. But these benefits come at the cost of much dirtier and more harmful emissions.

8. One byproduct of diesel combustion is NOx, which generally describes two primary compounds comprised of nitrogen and oxygen atoms, nitric oxide, and nitrogen dioxide. These compounds are formed in the cylinder of the engine during the high temperature combustion process. NOx pollution contributes to nitrogen dioxide, particulate matter in the air, and reacts with sunlight in the atmosphere to form ozone. Exposure to these pollutants has been linked with serious health dangers, including serious respiratory illnesses and premature death due to respiratory-related or cardiovascular-related effects. The U.S. government, through the EPA, has passed and enforced laws designed to protect U.S. citizens from these pollutants and certain chemicals and agents known to cause disease in humans. NO₂, which is the pollutant that NOx is converted to in the atmosphere, is one of the seven criteria pollutants that the Clean Air Act establishes as “wide-spread pollutants that were considered harmful to the public and environment.” The National Ambient Air Quality Standards, which form the backbone of the clean air regulations designed to protect human health and the environment from criteria pollutants, regulate these criteria pollutants. Regulation of NOx from diesel engines is one way that the EPA controls ambient concentrations of this harmful pollutant.

9. Automobile manufacturers must abide by these laws and must adhere to EPA rules and regulations. The state claims in this case are not based on these

laws but on deception aimed at consumers.

10. The Energy Independence and Security Act (EISA) of 2007 mandated a 40% increase in fuel economy by 2020. Tougher fuel economy standards were set to start for model year 2011 vehicles. Automobile manufacturers began planning to meet these standards. Almost all of the major automobile manufacturers rushed to develop “clean diesel” vehicles and promoted new diesel vehicles as environmentally friendly and clean, and they marketed the diesel vehicles as having better fuel economy than their gasoline counterparts. Volkswagen, Mercedes, Audi, General Motors, FCA, and other manufacturers began selling diesel cars and trucks as more powerful than their gasoline counterparts, but also as an environmentally friendly alternative to gasoline vehicles. And the marketing worked, as over two million diesel vehicles were purchased between 2007 and 2016 in the United States and over ten million in Europe, where new standards were also implemented. Ford’s F-Series trucks are the number one selling truck in the United States and Ford’s profits on truck sales are material to Ford’s profits.

11. The green bubble with respect to diesel vehicles burst on September 18, 2015, when the EPA issued a Notice of Violation of the Clean Air Act (the “First NOV”) to Volkswagen Group of America, Audi AG, and Volkswagen America for installing illegal “defeat devices” in 2009–2015 Volkswagen and Audi

diesel vehicles equipped with 2.0-liter diesel engines. The EPA found that the Volkswagen/Audi defeat device allowed the vehicles to pass emissions testing, while in the real world these vehicles polluted far in excess of emissions standards. The California Air Resources Board also announced that it had initiated an enforcement investigation of Volkswagen pertaining to the vehicles at issue in the First NOV.

12. On September 22, 2015, Volkswagen announced that 11 million diesel vehicles worldwide were installed with the same defeat device software that had evaded emissions testing by U.S. regulators. Volkswagen pled guilty to criminal charges and settled civil class actions for over ten billion dollars.¹

13. Government agencies began to reveal that many manufacturers, both in the United States and in Europe, had produced dozens of models that were exceeding emissions standards. On January 12, 2017, the EPA issued a Notice of Violation to FCA because it had cheated on its emissions certificates with respect to its Dodge Ram and Jeep Grand Cherokee EcoDiesel vehicles. And on May 23, 2017, the United States filed a civil suit in the Eastern District of Michigan alleging violations of the Clean Air Act (E.D. Mich. No. 17-cv-11633), which was later transferred to the Northern District of California (N.D. Cal. 3:17-cv-03446).

¹ See Exhibit 1, Nathan Bomey, Volkswagen Emission Scandal Widens: 11 Million Cars Polluting, USA Today (Sept. 22, 2015), <http://www.usatoday.com/story/money/cars/2015/09/22/volkswagen-emissions-scandal/72605874/>.

In Europe, watchdog groups, NGOs, and government agencies have cited virtually every manufacturer, including Ford, for violating the lower European standards.

14. To appeal to environmentally conscious consumers, compete with rival and top selling vehicles by General Motors and FCA, and comply with new emissions regulations that became effective in 2010, Ford markets its Super Duty vehicles as having low emissions, “clean” diesel technology, high fuel economy, and powerful torque and towing capacity. Ford charges a premium of approximately \$8,400 for diesel-equipped vehicles over comparable gasoline Super Duty trucks.

15. Ford’s representations are deceptive and false, and Ford sold these vehicles while omitting information that would be material to a reasonable consumer, namely that Ford has programmed its Super Duty vehicles to significantly reduce the effectiveness of the NOx reduction systems during common real-world driving conditions.

16. Ford has programmed the vehicles so that in a wide range of common driving conditions, the emissions systems are powered down, producing NOx far in excess of emissions standards. A reasonable consumer would not expect their Super Duty vehicle to spew unmitigated NOx in this fashion while driving in the city or on the highway, nor would a reasonable consumer expect that fuel economy was achieved in part by turning off or derating the emission systems; nor would a

reasonable consumer expect that if the emissions were as-promised, the advertised fuel economy and performance could not be achieved.

17. In stop-and-go conditions, including those identical to the FTP-75 certification cycle, emissions are routinely as high as five times the standard. In certain common driving conditions, such as modest uphill road grades, or with the use of a trailer that adds weight, emissions exceed the standard by 30 to 50 times. Ford advertised these vehicles as having “best-in-class towing capabilities” and expected Super Duty trucks to pull significant loads. Ford failed to disclose that “best-in-class towing” came with a byproduct of high NOx emissions, sometimes exceeding legal standards by 30 to 50 times. In stop-and-go driving, testing reveals that the vehicles operate 69% of the time above the emissions standard, 45% of the time at twice the standard, and 9% of the time at five times the standard.

18. Plaintiff alleges that the following Ford Super Duty models are affected by the unlawful, unfair, deceptive, and otherwise defective emission controls utilized by Ford: model year 2011–2018 F-250 and F-350 Super Duty diesel trucks (the “Polluting Vehicles”).

19. In addition, Ford markets the Polluting Vehicles as “fuel efficient” and “best-in-class” in fuel economy. Without manipulating its software to turn off or turn down the emission controls in common road conditions, Ford could not

achieve the fuel economy and range it promises.

20. Ford did not previously disclose to Plaintiff or Class members that in real-world driving conditions, the Polluting Vehicles can only achieve high fuel economy, power, and durability by reducing emission controls in order to spew NOx into the air.

21. Ford never disclosed to consumers that the Polluting Vehicles may be “clean” diesels in certain circumstances but are “dirty” diesels under common driving conditions. Ford never disclosed to consumers that it programs its emissions systems to work only under certain conditions. Ford never disclosed that it prioritizes engine power and profits over public health and the environment. Ford never disclosed that the Polluting Vehicles’ emissions materially exceed the emissions from gasoline-powered vehicles, that the emissions exceed what a reasonable consumer would expect from a “low emissions” vehicle, and that the emissions materially exceed applicable emissions limits in real-world driving conditions.

22. Ford did not act alone. At the heart of the diesel scandal in the United States and Europe are Robert Bosch GmbH (“Bosch GmbH”) and Robert Bosch LLC (“Bosch LLC”) (sometimes referred together as “Bosch”). Bosch GmbH and Bosch LLC were active and knowing participants in the scheme to evade U.S. emissions requirements. Bosch GmbH and Bosch LLC developed, manufactured,

and tested the electronic diesel control (EDC) that allowed Ford to implement the defeat device. The Bosch EDC17 is a good enabler for manufacturers to employ “defeat devices” as it enables the software to detect conditions when emission controls can be manipulated - i.e., conditions outside of the emissions test cycle. Almost all of the vehicles found or alleged to have been manipulating emissions in the United States (including vehicles by Mercedes, FCA, Volkswagen, Audi, Porsche, and General Motors) use a Bosch EDC17 device.

23. Plaintiff brings this action individually and on behalf of all other current and former owners or lessees of the Polluting Vehicles. Plaintiff seeks damages, injunctive relief, and equitable relief for Defendants’ misconduct related to the design, manufacture, marketing, sale, and lease of the Polluting Vehicles, as alleged in this Complaint.

II. JURISDICTION AND VENUE

24. This Court has subject matter jurisdiction over this litigation pursuant to 28 U.S.C. § 1331 as Plaintiff’s claims arise under the RICO Act, 18 U.S.C. § 1962. The Court also has diversity jurisdiction because Plaintiff and Defendants reside in different states. The Court has supplemental jurisdiction over Plaintiff’s state law claims under to 28 U.S.C. § 1967.

25. This Court also has original jurisdiction over this lawsuit pursuant to 28 U.S.C. § 1332(a)(1), as modified by the Class Action Fairness Act of 2005,

because Plaintiff and Defendants are citizens of different states; there are more than 100 members of the Class (as defined herein); the aggregate amount in controversy exceeds \$5 million, exclusive of attorneys' fees, interest, and costs; and Class members reside across the United States. The citizenship of each party is described further below in the "Parties" section.

26. This Court has personal jurisdiction over each Defendant pursuant to 18 U.S.C. § 1965(b) & (d). This Court has personal jurisdiction over Defendants because they have minimum contacts with the United States, this judicial district, and this State, and they intentionally availed themselves of the laws of the United States and this state by conducting a substantial amount of business throughout the state, including the design, manufacture, distribution, testing, sale, lease, and/or warranty of Ford vehicles in this State and District. At least in part because of Defendants' misconduct as alleged in this lawsuit, the Polluting Vehicles ended up on this state's roads and in dozens of franchise dealerships.

III. VENUE

27. Venue is proper in this Court under 28 U.S.C. § 1391 because (i) Defendants conduct substantial business in this District and have intentionally availed themselves of the laws and markets of the United States and this District; and/or (ii) many of the acts and transactions giving rise to this action occurred in this District, including, *inter alia*, Ford's promotion, marketing, distribution, and

sale of the Polluting Vehicles. Defendant Ford sells a substantial number of automobiles in this District, has dealerships located throughout this District, and the misconduct occurred in part in this District. Venue is also proper under 18 U.S.C. § 1965(a) because Defendants are subject to personal jurisdiction in this District, as alleged in the preceding paragraph, and Defendants have agents located in this District.

IV. PARTIES

A. PLAINTIFF BADAGLIACCO

28. Plaintiff Dina M. Badagliacco (for the purpose of this paragraph, “Plaintiff”) is an individual residing in Hammonton, New Jersey. On or around June 9, 2015, Plaintiff purchased a 2015 Ford F-250 from Gentilini Ford, an authorized Ford dealer in Woodbine, New Jersey. Plaintiff purchased and still owns this vehicle. Unknown to Plaintiff at the time the vehicle was purchased, it was equipped with an emissions system that turned off or limited its emissions reduction system during common driving conditions and emitted pollutants such as NOx at many multiples of emissions emitted from gasoline-powered vehicles, at many times the level a reasonable consumer would expect from a “Clean Diesel,” and at many multiples of that allowed by federal law. Ford’s unfair, unlawful, and deceptive conduct in designing, manufacturing, marketing, selling, and leasing the vehicle without proper emission controls has caused Plaintiff out-of-pocket loss in

the form of overpayment at the time of purchase of at least \$8,400. Ford knew about, or recklessly disregarded, the inadequate emission controls during normal driving conditions, but did not disclose such facts or their effects to Plaintiff, so Plaintiff purchased the vehicle on the reasonable but mistaken belief that this vehicle was a “clean diesel” and/or a “low emission diesel,” complied with U.S. emissions standards, was properly EPA-certified, and would retain all of its promised fuel economy and performance throughout its useful life. Plaintiff selected and ultimately purchased the vehicle, in part, because of the diesel system, as represented through advertisements and representations made by Ford. Plaintiff recalls that before she purchased the vehicle, she reviewed advertisements on Ford’s website and representations from Ford’s authorized dealer touting the efficiency, fuel economy, and power and performance of the engine. Had Ford disclosed the manipulation of emissions or the fact that the vehicle actually emitted unlawfully and/or unexpectedly high levels of pollutants, Plaintiff would not have purchased the vehicle or would have paid less for it. Plaintiff and each Class member has suffered an ascertainable loss as a result of Ford’s omissions and/or misrepresentations and Defendants’ operation of a RICO enterprise associated with the Super Duty diesel engine system, including but not limited to a high premium for the Super Duty diesel engine compared to what they would have paid for a similar vehicle with a gasoline-powered engine, out-of-pocket losses by

overpaying for the vehicles at the time of purchase, and future attempted repairs, future additional fuel costs, and decreased performance of the vehicles once a repair to the emissions system is made. Neither Ford nor any of its agents, dealers, or other representatives informed Plaintiff or Class members of the existence of the unlawfully high emissions and/or defective nature of the Super Duty diesel engine system of the Polluting Vehicles prior to purchase.

B. DEFENDANTS

1. Ford Motor Company

29. Ford Motor Company is a corporation doing business in all 50 states and the District of Columbia, and is organized under the laws of the State of Delaware, with its principal place of business in Dearborn, Michigan.

30. At all times relevant to this action, Ford manufactured, sold, and warranted the Polluting Vehicles throughout the United States. Ford and/or its agents, divisions, or subsidiaries designed, manufactured, and installed the diesel engine systems on the Polluting Vehicles. Ford also developed and disseminated the owner's manuals, supplements, and warranty booklets, advertisements, and other promotional materials relating to the Polluting Vehicles, and Ford provided these to its authorized dealers for the express purpose of having these dealers pass such materials to potential purchasers at the point of sale. Ford also created, designed, and disseminated information about the quality of the Polluting Vehicles

to various agents of various publications for the express purpose of having that information reach potential consumers.

2. The Bosch Defendants

31. From at least 2005 until 2015, Robert Bosch GmbH, Robert Bosch LLC, and currently unnamed Bosch employees (together, “Bosch”) were knowing and active participants in the creation, development, marketing, and sale of illegal defeat devices specifically designed to evade U.S. emissions requirements in vehicles sold solely in the United States and Europe. These vehicles include the Ford vehicles in this case and the Dodge Ram 1500 EcoDiesel and Jeep Grand Cherokee EcoDiesel, as well as models made by Volkswagen, Audi, Porsche, General Motors, and Mercedes.

32. The following is a list, excluding the Ford vehicles in this case, of all diesel models in the United States with Bosch-supplied software whose emissions exceed federal and California emission standards and whose emissions are beyond what a reasonable consumer would expect from vehicles marketed as “clean” or “low emission”:

AFFECTED VEHICLES

	VOLKSWAGEN:
	2.0-liter Class Vehicles
	VW Jetta TDI 2009-15 VW Jetta SportWagen TDI 2009-14 VW Beetle TDI 2012-15 VW Beetle Convertible TDI 2012-15 Audi A3 TDI 2010-15 VW Golf TDI 2010-15 VW Golf SportWagen TDI 2015 VW Passat TDI 2012-15
	3.0-liter Class Vehicles
	VW Touareg TDI 2009-16 Porsche Cayenne Diesel 2013-16 Audi A6 Quattro TDI 2014-16 Audi A7 Quattro TDI 2014-16 Audi A8 TDI 2014-16 Audi A8L TDI 2014-16 Audi Q5 TDI 2014-16 Audi Q7 TDI 2009-16
	FIAT CHRYSLER:
	Jeep Grand Cherokee EcoDiesel 2014-16 Dodge Ram 1500 EcoDiesel 2014-16
	
	GENERAL MOTORS:
	GMC Sierra Duramax Diesel 2500 HD 2011-16 GMC Sierra Duramax Diesel 3500 HD 2011-16 Chevy Silverado Duramax Diesel 2500HD 2011-16 Chevy Silverado Duramax Diesel 3500HD 2011-16
	
	MERCEDES:
	ML 320 2007-16 R320 2007-16 S Class 2007-16 ML 350 2007-16 E Class 2007-16 GLK Class 2007-16 GL 320 2007-16 GL Class 2007-16 GLE Class 2007-16 E320 2007-16 ML Class 2007-16 Sprinter 2007-16 S350 2007-16 R Class 2007-16

33. The Bosch entities participated not just in the development of the defeat device, but also in the scheme to prevent U.S. regulators from uncovering the device's true functionality. Moreover, each Bosch entities' participation was not limited to engineering the defeat device (in a collaboration described as unusually close). Rather, Bosch GmbH and Bosch LLC marketed "clean diesel" in the United States and communicated with U.S. regulators about the benefits of

“clean diesel,” another highly unusual activity for a mere supplier. These lobbying efforts, taken together with evidence of each Bosch entities’ actual knowledge that its software could be operated as a defeat device and participation in concealing the true functionality of the device from U.S. regulators, can be interpreted only one way under U.S. law: each Bosch entity was a knowing and active participant in a massive, decade-long conspiracy with Ford, Volkswagen, Audi, Mercedes, General Motors, and others to defraud U.S. consumers, regulators, and diesel car purchasers or lessees. Bosch GmbH and Bosch LLC have enabled approximately two million vehicles to be on the road in the United States polluting at levels that exceed emissions standards and which use software that manipulate emission controls in a manner not expected by a reasonable consumer.

34. Robert Bosch GmbH is a German multinational engineering and electronics company headquartered in Gerlingen, Germany. Robert Bosch GmbH is the parent company of Robert Bosch LLC. Robert Bosch GmbH, directly and/or through its North American subsidiary Robert Bosch LLC, at all material times, designed, manufactured, and supplied elements of the defeat device to Ford for use in the Polluting Vehicles. Bosch GmbH is subject to the personal jurisdiction of this Court because it has availed itself of the laws of the United States through its management and control over Bosch LLC and over the design, development, manufacture, distribution, testing, and sale of hundreds of thousands of the defeat

devices installed in the Polluting Vehicles sold or leased in the United States.

Employees of Bosch GmbH and Bosch LLC have collaborated in the emissions scheme with Ford in this judicial district and have been present in this district.

35. Robert Bosch LLC is a Delaware limited liability company with its principal place of business located at 38000 Hills Tech Drive, Farmington Hills, Michigan. Robert Bosch LLC is a wholly owned subsidiary of Robert Bosch GmbH. Robert Bosch LLC, directly and/or in conjunction with its parent Robert Bosch GmbH, at all material times, designed, manufactured, and supplied elements of the defeat device to Ford for use in the Polluting Vehicles.

36. Both Bosch GmbH and Bosch LLC (collectively, “Bosch”) operate under the umbrella of the Bosch Group, which encompasses some 340 subsidiaries and companies. The “Bosch Group” is divided into four business sectors: Mobility Solutions (formerly Automotive Technology), Industrial Technology, Consumer Goods, and Energy and Building Technology. The Mobility Solutions sector, which supplies parts to the automotive industry, and its Diesel Systems division, which develops, manufacturers and applies diesel systems, are particularly at issue here and include the relevant individuals at both Bosch GmbH and Bosch LLC. Bosch’s sectors and divisions are grouped not by location, but by subject matter. Mobility Solutions includes the individuals involved in the RICO enterprise and conspiracy at both Bosch GmbH and Bosch LLC. Some individuals worked at

both Bosch LLC and Bosch GmbH during the course of the RICO conspiracy. The acts of individuals described in this Complaint have been associated with Bosch GmbH and Bosch LLC whenever possible. Regardless of whether an individual works for Bosch LLC in the United States or Bosch GmbH in Germany, the individuals often hold themselves out as working for “Bosch.” This collective identity is captured by Bosch’s mission statement: “We are Bosch,” a unifying principle that links each entity and person within the Bosch Group.² Bosch documents and press releases often refer to the source of the document as “Bosch” without identifying any particular Bosch entity. Thus, the identity of which Bosch defendant was the author of such documents and press releases cannot be ascertained with certainty until Bosch GmbH and Bosch LLC respond to discovery requests in this matter.

37. Bosch holds itself out to the world as one entity: “the Bosch Group.” The Diesel Systems division, which developed the EDC17, is described as part of the Bosch Group. In the case of the Mobility Solutions sector, which oversees the Diesel Systems Group, the Bosch Group competes with other large automotive suppliers.³

² Exhibit 2, Bosch 2014 Annual Report, available at http://www.bosch.com/en/com/bosch_group/bosch_figures/publications/archive/archive-cg12.php.

³ See, e.g., Exhibit 3, Bosch’s 2016 Annual Report, available at https://assets.bosch.com/media/global/bosch_group/our_figures/pdf/bosch-annual-report-2016.pdf, at 23.

38. The Bosch publication *Bosch in North America* represents that “Bosch supplies . . . clean-diesel fuel technology for cars and trucks.” Throughout the document describing its North American operations, the company refers to itself as “Bosch” or “the Bosch Group.”⁴

39. The *Bosch in North America* document proclaims that Automotive Technology is “Bosch’s largest business sector in North America.” In this publication, Bosch never describes the actions of any separate Bosch legal entity, like Bosch LLC, when describing its business, but always holds itself out as “the Bosch Group.”⁵

40. German authorities are now investigating Bosch GmbH and the role in the emissions scandal and are focusing on certain Bosch employees:⁶

Three Bosch Managers Targeted as German Diesel Probe Expands

A German probe into whether Robert Bosch GmbH helped Volkswagen AG cheat on emissions tests intensified as Stuttgart prosecutors said they were focusing on three managers at the car-parts maker.

While Stuttgart prosecutors didn’t identify the employees, the step indicates that investigators may have found specific evidence in the probe. Previously, prosecutors have said they were looking into the role “unidentified” Bosch employees may have played in providing software that was used to cheat on emission tests.

⁴ Exhibit 4, *Bosch in North America* (May 2007), available at <http://www.bosch.us/content/language1/downloads/BINA07.pdf>, at 2.

⁵ *Id.* at 5.

⁶ Exhibit 5, *Three Bosch Managers Targeted as German Diesel Probe Expands*, Bloomberg (June 29, 2007), <https://www.bloomberg.com/news/articles/2017-06-29/three-bosch-managers-targeted-as-german-diesel-probe-expands>.

“We have opened a probe against all three on suspicions they aided fraud in connection to possible manipulation in emissions treatments in VW cars,” Jan Holzner, a spokesman for the agency, said in an emailed statement. “All of them are managers with the highest in middle management.”

Bosch, which is also being investigated by the U.S. Department of Justice, has been caught up in the VW diesel scandal that emerged in 2015 over allegations its employees may have helped rig software that helped the carmaker to cheat emission tests. Earlier this year, Stuttgart prosecutors opened a similar probe into Bosch’s role in connection with emission tests of Daimler cars.

A spokesman for Bosch said that while he can’t comment on individual employees, the company ‘takes the overall allegations in diesel cases seriously and has been cooperating fully from the beginning of the probes.’

The Stuttgart probe is running parallel to the central criminal investigation in Braunschweig, closer to VW’s headquarters. That investigation is targeting nearly 40 people on fraud allegations related to diesel-emission software, including former VW Chief Executive Officer Martin Winterkorn.

Prosecutors’ interest extends to multiple units in the VW family -- including luxury brands Audi and Porsche. In addition, Stuttgart prosecutors are also reviewing a third case related to Bosch’s cooperation with Fiat Chrysler Automobiles NV on software for diesel engines.

41. As reported by Bloomberg on September 16, 2017, U.S. prosecutors are examining Bosch’s role in supplying its EDC17 to manufacturers other than Bosch:

U.S. prosecutors are investigating whether Germany’s Robert Bosch GmbH, which provided software to Volkswagen AG, conspired with the automaker to engineer diesel cars that would cheat U.S. emissions testing, according to two people familiar with the matter.

Among the questions the Justice Department is asking in the criminal probe, one of them said, is

whether automakers in addition to VW used Bosch software to skirt environmental standards. Bosch, which is also under US. Civil probe and German inquiry, is cooperating in investigations and can't comment on them, said spokesman Rene Ziegler.

The line of inquiry broadens what is already the costliest scandal in US. automaking history. Wolfsburg-based VW faces an industry-record \$16.5 billion, and counting, in criminal and civil litigation fines after admitting last year that its diesel cars were outfitted with a "defeat device" that lowered emissions to legal levels only when it detected the vehicle was being tested.

More than a half dozen big manufacturers sell diesel-powered vehicles in the U.S. The people familiar with the matter declined to say whether specific makers are under scrutiny.⁷

42. Recently, researchers from Rohr-Universität in Bochum, Germany, and University of California-San Diego uncovered Bosch's role in connection with the manipulation of emission controls in certain Volkswagen and FCA vehicles. The researchers found no evidence that Volkswagen and FCA wrote the code that allowed the operation of defeat devices. All the code they analyzed was found in documents copyrighted by Robert Bosch GmbH. These researchers found that in the "function sheets" copyrighted by Robert Bosch GmbH, the code to cheat the emissions test was labeled as modifying the "acoustic condition" of the engine, a label that helped the cheat fly under the radar. Given that Ford vehicles have a

⁷ Exhibit 6, *U.S. Is Investigating Bosch in Widening VW Diesel-Cheat Scandal* (September 16, 2016), available at <https://www.bloomberg.com/news/articles/2016-09-16/vw-diesel-cheat-probe-widens-as-u-s-said-to-investigate-bosch> (last visited on June 5, 2018).

Bosch EDC17, as did the cheating Volkswagen, General Motors, Mercedes, and FCA vehicles, and given testing described below that reveals defeat devices in Ford vehicles, it is plausible to allege that Bosch was a participant in the scheme to hide the true emissions of Ford's Super Duty vehicles, and supplied a similar "function sheet" to Ford to enable a similar emission deception.

V. FACTUAL ALLEGATIONS

A. The environmental challenges posed by diesel engines and the U.S. regulatory response

43. The U.S. government, through the EPA, has passed and enforced laws designed to protect United States citizens from pollution and, in particular, certain chemicals and agents known to cause disease in humans. Automobile manufacturers must abide by these laws and must adhere to EPA rules and regulations.

44. The Clean Air Act has strict emissions standards for vehicles, and it requires vehicle manufacturers to certify to the EPA that the vehicles sold in the United States meet applicable federal emissions standards to control air pollution. Every vehicle sold in the United States must be covered by an EPA-issued certificate of conformity.

45. There is a very good reason that these laws and regulations exist, particularly in regards to vehicles with diesel engines: in 2012, the World Health Organization declared diesel vehicle emissions to be carcinogenic and about as

dangerous as asbestos.

46. Diesel engines pose a particularly difficult challenge to the environment because they have an inherent trade-off between power, fuel efficiency, and NOx emissions—the greater the power and fuel efficiency, the dirtier and more harmful the emissions.

47. Instead of using a spark plug to combust highly refined fuel with short hydrocarbon chains, as gasoline engines do, diesel engines compress a mist of liquid fuel and air to very high temperatures and pressures, which causes the diesel to spontaneously combust. This causes a more powerful compression of the pistons, which produces greater engine torque—i.e., more power.

48. The diesel engine is able to do this both because it operates at a higher compression ratio than a gasoline engine and because diesel fuel contains more energy than gasoline.

49. But this greater energy and fuel efficiency comes at a cost: diesel produces dirtier and more dangerous emissions. One byproduct of diesel combustion is a combination of nitric oxide and nitrogen dioxide, collectively called NOx, compounds that form at high temperature in the cylinder during combustion.

50. NOx pollution contributes to nitrogen dioxide, particulate matter in the air, and reacts with sunlight in the atmosphere to form ozone. Exposure to

these pollutants has been linked with serious health dangers, including asthma attacks and other respiratory illnesses serious enough to send people to the hospital. Ozone and particulate matter exposure have been associated with premature death due to respiratory-related or cardiovascular-related effects. Children, the elderly, and people with pre-existing respiratory illness are at acute risk of health effects from these pollutants. As a ground level pollutant, NO₂, a common byproduct of NO_x reduction systems using an oxidation catalyst, is highly toxic in comparison to nitric oxide (NO). If overall NO_x levels are not sufficiently controlled, then concentrations of NO₂ levels at ground level can be quite high, where they have adverse acute health effects.

51. Though more efficient, diesel engines come with their own set of challenges, as emissions from diesel engines can include higher levels of NO_x and particulate matter (PM) or soot than emissions from gasoline engines due to the different ways the different fuels combust and the different ways the resulting emissions are treated following combustion. NO_x emissions can be reduced through exhaust gas recirculation (EGR), whereby exhaust gases are routed back into the intake of the engine and mixed with fresh incoming air. Exhaust gas recirculation lowers NO_x by reducing the available oxygen, increasing the heat capacity of the exhaust gas mixture, and by reducing maximum combustion temperatures; however, EGR can also lead to an increase in PM as well. NO_x and

PM emissions can also be reduced through expensive exhaust gas after-treatment devices, primarily catalytic converters, which use catalyzed chemical reactions to transform the chemical composition of a vehicle's NOx and PM emissions into harmless inert gases, such as nitrogen gas (N2), water (H2O) and carbon dioxide (CO2).

52. Diesel engines thus operate according to this trade-off between price, NOx, and PM; and for the EPA to designate a diesel car as a "clean" vehicle, it must produce both low PM and low NOx. In 2000, the EPA announced stricter emissions standards requiring all diesel models starting in 2007 to produce drastically less NOx and PM than years prior. Before introducing affected vehicles into the U.S. stream of commerce (or causing the same), Ford was required to first apply for, and obtain, an EPA-administered certificate of conformity (COC) certifying that the vehicle comported with the emissions standards for pollutants enumerated in 40 C.F.R. §§ 86.1811-04, 86.1811-09, and 86.1811-10. The Clean Air Act expressly prohibits automakers, like Ford, from introducing a new vehicle into the stream of commerce without a valid COC from the EPA. Moreover, vehicles must be accurately described in the COC application "in all material respects" to be deemed covered by a valid COC. California's emission standards are even more stringent than those of the EPA. The California Air Resources Board (CARB), the State of California's regulator, requires a similar application

from automakers to obtain an Executive Order confirming compliance with California's emission regulations before allowing the vehicle onto California's roads.

53. The United States has two sets of parallel standards that affect fuel economy: (1) the corporate average fuel economy (CAFE) standards adopted by the National Highway Traffic Safety Administration (NHTSA), an agency within the Department of Transportation (DOT); and (2) greenhouse gas (GHG) emissions standards adopted by the EPA. The first CAFE standards were adopted in the 1970s in response to the Arab oil embargo. The first GHG emission standards became effective in model year 2012.

54. The Energy Policy Conservation Act of 1975 established the first CAFE standards for light-duty vehicles. Separate sets of standards were adopted for cars and for light trucks. For cars, the standards aimed to double the average fuel economy from 13.6 miles per gallon (mpg) in 1974 to 27.5 mpg by 1985. Vehicle manufacturers almost met this target, reaching 27.0 mpg by 1985. While the CAFE program remained in force for a number of years, its fuel economy target for cars stagnated at 27.5 mpg through 2010.

55. In 2007, the stage was set for more progressive fuel economy and GHG emission regulations. The Energy Independence and Security Act (EISA) of 2007 mandated a 40% increase in fuel economy by 2020. Tougher fuel economy

standards were to be set starting with model year 2011, until the standards achieve a combined average fuel economy of 35 mpg for model year 2020.

56. In April 2010, NHTSA and EPA finalized new, harmonized CAFE and GHG emission rules for model year 2012–2016 light-duty vehicles. These rules have been designed to result in an average CAFE fuel economy of 34.1 mpg (6.9 L/100 km) and CO2 emissions of 250 g/mile in model year 2016 vehicles.

57. These new model year 2011 rules presented manufacturing with obstacles and opportunity. The opportunity was capturing new markets by promoting technology that complied with new emission regulations. Manufacturers adopted several strategies, including the introduction of electric and diesel models.

58. The truck business is vitally important to Ford. Every day, Ford sells an average of 2,452 F-Series trucks.

59. Ford’s Super Duty is designed to appeal to consumers who will want to use a “working truck”—i.e., to haul a load or a trailer. A diesel option is attractive to consumers because diesel allegedly offers better fuel economy and towing capacity.

B. The F-250, F-350 and F-450 share a common engine

60. To meet the EPA emissions requirements applicable to model year 2011 vehicles, Ford introduced a new 6.7-liter Power Stroke diesel engine in both

the F-250 and the F-350, and subsequently extended this design to 2018.

61. For the purposes of this Complaint, the following terms listed below are used to describe the diesel engine found in all F-250, F-350 and F-450 vehicles at issue in this case. These two models share the same engine test group and are considered by EPA and CARB to have identical engines.

62. The F-250, F-350 and F-450 engine is a Ford 6.7-liter Power Stroke diesel engine that includes the typical “clean diesel” NOx control strategies: in-cylinder controls and injection timing, exhaust gas recirculation (EGR), a diesel oxidation catalyst (DOC), a diesel particulate filter (DPF), and urea selective catalytic reduction (SCR). The engine and emission control system is controlled by the Bosch EDC17.

63. The critical emission control components in all 6.7-liter Power Stroke engines are as follows:

1. Injection timing and in-cylinder controls

64. Fuel is metered into the engine during the power stroke using an injector with an electronic controller. Fuel can be delivered either before the piston reaches the top of its stroke (top dead center, or “TDC”), which is called “advanced timing” at the top of the stroke, or after TDC, which is called “retarded timing.” Furthermore, fuel delivered to the cylinder is often delivered in distinct pulses rather than a single pulse, with the goal being to reduce emissions and

improve efficiency. Generally, advanced timing will increase NOx emissions and reduce particulate matter (PM) emissions (but improve fuel economy), while retarded timing will reduce NOx emissions and increase PM emissions. In-cylinder controls like injection timing play a critical role in the overall NOx emissions performance of the engine, as the emissions coming out of the cylinder must be low enough that the other emission control systems aren't pushed beyond their technical limits. If engine-out emissions of NOx are too high, the EGR and SCR systems may not be able to reduce NOx sufficiently to meet the standard.

65. The fuel system is also capable of injecting fuel very late in the combustion cycle, up to 140 degrees after engine top dead center. This late cycle fuel injection allows fuel to leave the cylinder unburned so it can react over the DOC to provide hot exhaust for the purpose of regenerating the DPF.

2. EGR – Exhaust Gas Recirculation

66. Exhaust gas recirculation is used to reduce NOx emissions by introducing part of the exhaust exiting the engine back into the engine intake. Since oxides of nitrogen form in oxygen rich, high temperature environments, introducing exhaust gases back into the intake air charge reduces the amount of these compounds that form primarily by reducing the oxygen concentration and increasing the overall heat capacity of the combustion gas mixture. EGR results in lower peak temperatures during combustion and, in turn, lower NOx

concentrations. Exhaust gas recirculation is not a new technology and has been regularly used on diesel engines for many years. Generally, the higher the EGR rate the greater the reduction in NOx emissions, though PM emissions are also generally increased, which causes the DPF to “fill up” more frequently and complicates the overall emission control strategy.

3. DOC – Diesel Oxidation Catalyst

67. The diesel oxidation catalyst converts hydrocarbons and carbon monoxide into water and carbon dioxide through an oxidization reaction. The DOC also converts nitric oxide to nitrogen dioxide to generate favorable conditions for the reduction of NOx in the SCR system downstream of the DOC. The nitrogen dioxide generated by the DOC is also critical for proper function of the DPF, as nitrogen dioxide is used to remove captured PM from the DPF in a process called passive regeneration. If insufficient nitrogen dioxide is available for passive regeneration, the engine may be forced to perform an active regeneration, a process that negatively impacts fuel economy and performance.

68. Also, as mentioned earlier, the DOC is used to oxidize late cycle injected fuel in order to provide heat to assist in active DPF regeneration.

4. DEF Injector

69. Diesel exhaust fluid (DEF) is an integral part of the SCR system, as it provides the necessary reactant to allow the SCR system to reduce NOx. DEF is

injected upstream of the SCR. DEF is composed of 32.5% urea, its active ingredient, distilled water, and a very small amount of additives. DEF is required for the selective catalytic reduction process to occur. The heat of the exhaust converts the DEF into ammonia, which in turn reacts with NOx in the SCR system. Generally speaking, within the design limits of the SCR system, higher DEF injection rates lead to larger reductions in NOx over the SCR system.

5. SCR – Selective Catalytic Reduction

70. Once DEF is added to the exhaust, it travels through the selective catalytic reduction catalyst. Here, oxides of nitrogen (NOx) are converted to nitrogen gas (N2) and water (H2O) by means of a reduction reaction. The SCR system significantly reduces NOx emissions which allows for more freedom in the calibration of the engine. The drawback of SCR is its increased complexity and the need to carry and replenish the DEF.

6. DPF – Diesel Particulate Filter

71. Once the exhaust stream has been treated by the DOC and SCR, it travels through the diesel particulate filter (DPF), where particulate matter (soot) is trapped and stored. The captured material is cleaned through a process known as regeneration, which is divided into two strategies. First, passive regeneration occurs any time the vehicle is being operated, provided nitrogen dioxide concentrations are relatively high and the exhaust gas temperature is high enough.

If those two conditions are met, nitrogen dioxide (NO₂) will react with captured PM and oxidize it to CO₂, thus cleaning out the DPF. It is a continuously occurring process, meaning that it occurs any time the conditions are met under normal operation, but the rate of regeneration is limited by the exhaust temperature and the concentration of NO₂. Ideal DPF operation relies almost entirely on passive regeneration. Very low NO₂ concentrations or very low exhaust temperatures can prevent passive regeneration from occurring. Second, active regeneration occurs only when the engine senses that the DPF needs to be cleaned as the DPF is approaching maximum capacity and generating too much exhaust backpressure (usually as a result of insufficient passive regeneration). During this process, the primary injection timing is retarded, which causes higher temperature exhaust to leave the cylinder. These higher temperatures then pre-heat the DOC such that the late cycle fuel will react and generate sufficient heat for regeneration, approximately 600°C. This process creates very high temperatures that allow captured PM to oxidize in the DPF without the use a catalyst or NO₂, thus “cleaning out” the DPF. This process is called “active regeneration.” Active regeneration dramatically reduces fuel economy since fuel is being used for purposes other than moving the vehicle. For this reason, it is generally desirable to reduce the need for active regeneration and create conditions that are favorable for passive regeneration. Higher exhaust temperatures are also detrimental to the SCR

catalyst as they can cause hydrothermal degradation of the catalyst over time.

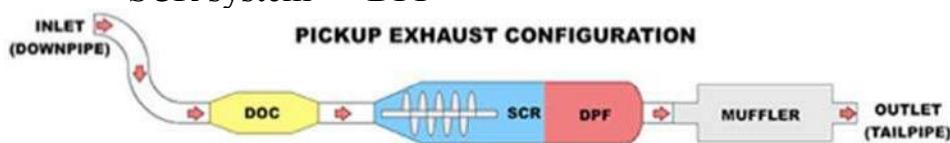
72. Most OEMs that use SCR opt for a configuration that puts the key components in the following order:

Normal Configuration: Diesel Oxidation Catalyst → Diesel Particulate Filter
→
SCR system

73. There are a few reasons to do this, but one primary reason is to expose the DPF to high levels of NOx. This is favorable for the successful passive regeneration of a DPF. The higher the NOx concentration, the better the DPF can remove the captured carbon without the need for fuel-consuming active regenerations, particularly when NOx emission reduction technologies like retarded engine timing and EGR tend to increase the rate at which the DPF accumulates PM.

74. Ford chose a configuration for the Power Stroke which is different from the common configuration. This configuration is shown below:

F-250 Configuration: Diesel Oxidation Catalyst → SCR system → DPF



75. The Power Stroke configuration puts the DPF downstream of the SCR system—the last device in the chain to reduce NOx and bring it down to the emission standard—and therefore puts the DPF in an unfavorable location from a

regeneration standpoint.

76. Ford does this specifically to address the cold start, and to a lesser extent the hot start, portions of the FTP-75 certification cycle, discussed below.

77. Ford wants the SCR catalyst to get as hot as possible as quickly as possible in the cold start test so that it can start doing its job of reducing NOx. If Ford put objects with a lot of heat capacity in the exhaust path upstream of the SCR system, they remove heat from the exhaust and slow the process of heating up the SCR system. In the meantime, cold start NOx emissions are very high and Ford may not pass the certification cycle. In this case, the high heat capacity object is the DPF. Ford put it downstream of the SCR so that it doesn't delay the heating up of the SCR catalyst to the temperature where it actually works (called light-off).

78. Putting the SCR as close to the engine as possible with as little material in the way as possible is great for cold start emissions and helps the OEM meet the emission standard.

79. This configuration creates an inherent conflict of functional intent with the operation of the DPF. In the configuration where the DPF is upstream of the SCR system, the manufacturer is happy to have the NOx coming out of the SCR system to be as low as possible.

80. Not the case with the Power Stroke configuration. A manufacturer like Ford wants NOx to be low so that it can meet the standard, but also to be high

because Ford needs the high NOx going into the DPF to help keep it clean. As retarded engine timing and EGR further complicate the issue by increasing the engine-out PM emission rates, the need for passive regeneration is critical. If Ford can't keep the DPF clean with high NOx (i.e., "passive" regeneration), the only alternative is "active" regeneration, which comes with a fuel economy and performance penalty. Reduced use of retarded engine timing and EGR come with the additional benefit of improved fuel economy.

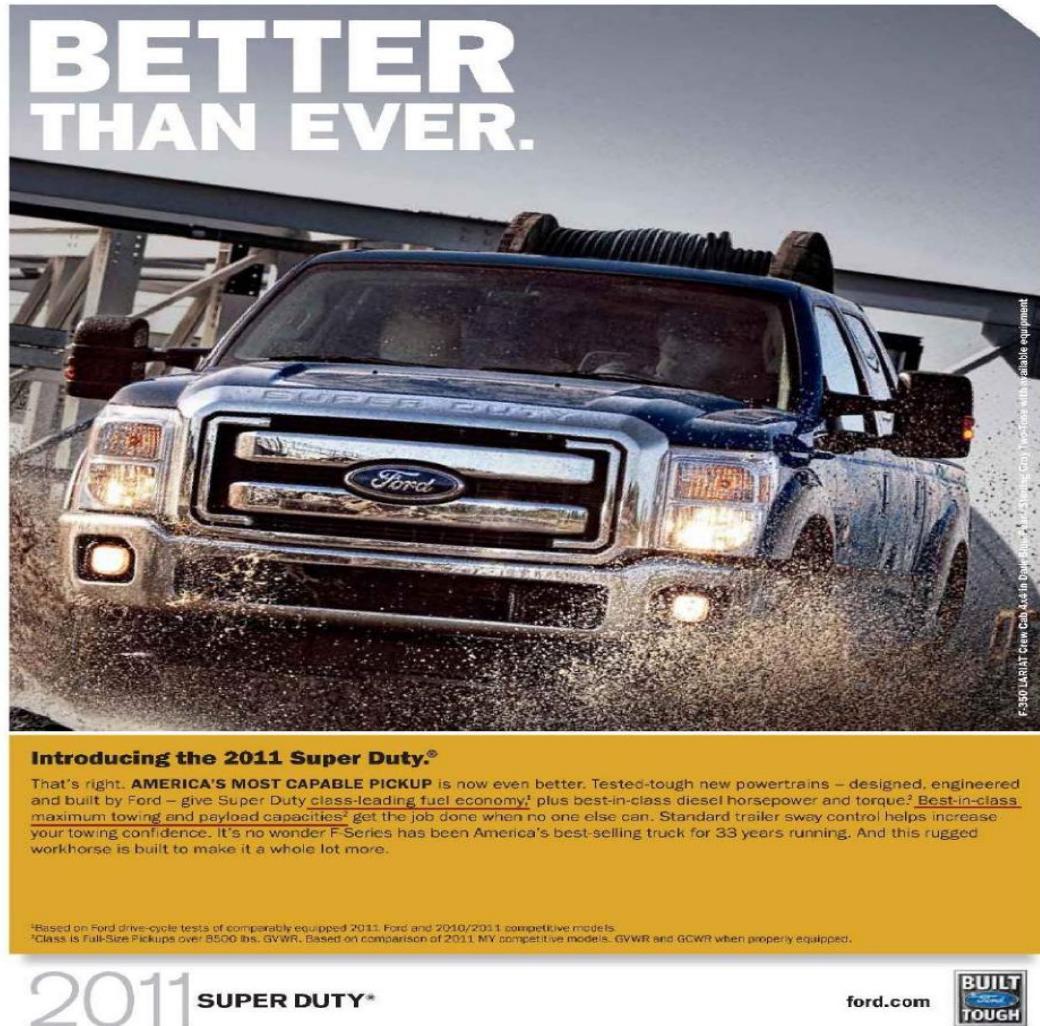
C. Ford promoted the Super Duty vehicles as the "cleanest Super Duty diesel ever" with "best-in-class fuel economy" and "best-in-class towing" because Ford knew the environment, fuel economy, and towing capacity are material to a reasonable consumer

81. Ford understood that a vehicle's pollution footprint is a factor in a reasonable consumer's decision to purchase a vehicle. Ford, in press releases, owner's manuals, and brochures that it intended to reach the eyes of consumers, promoted the Super Duty engine as delivering reduced NOx or having "reduced NOx emissions." Ford was acutely aware of this due to the public perception that diesels are "dirty."

82. Ford also understood that fuel economy was material to the average consumer. And Ford understood that since these were "working trucks," hence the label "Super Duty," that towing capacity was important to consumers.

83. The following are examples of Ford advertising promoting lower emissions, power, fuel economy, and towing capacity.

84. Ford's brochure for the 2011 Super Duty promised "class leading fuel economy" and towing capacity:⁸



85. Ford also promised in its 2011 brochure that the Super Duty's engine

⁸ Exhibit 7, Ford's 2011 Super Duty brochure.

was the “most tested power stroke diesel engine ever” and that the engine had been put through a “groundbreaking battery of computer simulations, lab and real-world tests.” This means that if emissions exceed standards in common driving conditions, such an occurrence would have been discovered in light of the promised aforementioned extensive real-world testing. Ford promised the “best diesel and gas fuel economy of any truck in its class”:

TESTED TOUGH
to **OUTWORK** all the rest.

Already proven – beyond any other.

The new 2011 Super Duty® endured more torture testing than any Ford Truck before it – including over 10 million cumulative miles on the **MOST TESTED POWER STROKE® DIESEL ENGINE EVER**. A world-class team put it through a groundbreaking battery of computer simulations, lab and real-world tests – running it for **THOUSANDS OF HOURS ON END**. In extreme conditions. Scorching heat. Bitter cold. Loaded to the max. Up the steepest grades. All to confirm that this truck is far more than the sum of its parts.

Super Duty is built to be the best – bringing you the **BEST DIESEL AND GAS FUEL ECONOMY** of any truck in its class³ – plus lots of other capabilities and features only Ford can deliver.

BEST IN CLASS

- Max. Horsepower and Torque
- Max. Conventional Towing: 17,500 lbs.^{2,3}
- Max. 5th-Wheel Towing: 24,400 lbs.³
- Max. Payload: 7,070 lbs.³
- Fuel Economy: Diesel and Gas

CLASS EXCLUSIVES

- Live-Drive Power TakeOff (PTO)⁴
- 5th-Wheel/Gooseneck Trailer Tow Prep Package⁴
- Standard trailer sway control on both SRW and DRW
- LCD Productivity Screen⁴
- Standard Safety Canopy[™] System
- Ford Work Solutions[™]
- Tailgate Step⁵

¹Class is Full-Size Pickups over 8,500 lbs. GVWR. Based on Ford drive-cycle tests of comparably equipped 2011 Ford and 2010/2011 competitive models. ²Available early 2011. ³When properly equipped. 17,500 on F-350 DRW and F-450. 24,400 on F-450 Pickup. 7,070 on F-350 DRW Regular Cab 4x2. ⁴Optional. ⁵Optional.

2011 **SUPER DUTY®**

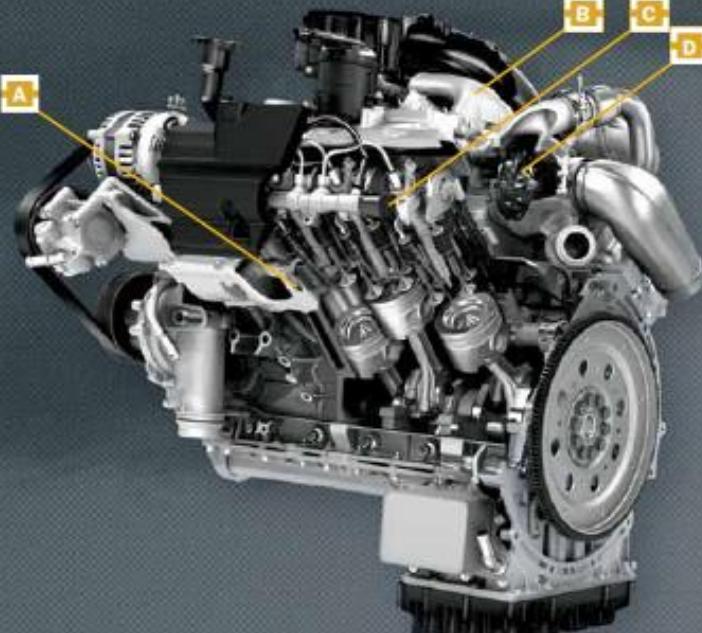
ford.com



86. The 2011 Ford brochure makes specific promises about reducing NOx, including representations that the Super Duty is the “cleanest Super Duty diesel ever,” the Super Duty “reduces nitrogen oxide (NOx) levels by more than 80%,” and the Super Duty has the “best diesel fuel economy . . . in the class”:

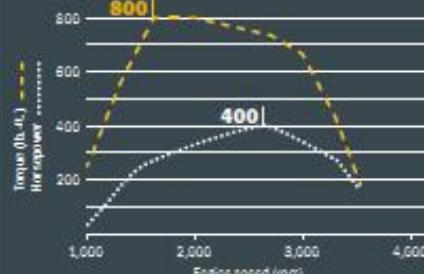


6.7 POWER STROKE
B20



6.7L V8 DIESEL PERFORMANCE

14% MORE PEAK HP and 23% MORE PEAK TORQUE, at lower rpm, than its predecessor.



Engine Speed (rpm)	Peak Torque (lb-ft)	Peak Horsepower (HP)
1,000	400	300
2,000	600	350
3,000	800	400
4,000	600	350

A ALUMINUM CYLINDER HEADS with precision dual water jackets reduce weight and improve cooling.

B CLASS EXCLUSIVE INBOARD EXHAUST AND OUTBOARD AIR INDUCTION architecture helps reduce turbo lag.

C COMMON RAIL FUEL INJECTION SYSTEM, operating at nearly 30,000 psi, uses precise control to provide optimum power, efficiency and noise, vibration and harshness (NVH) performance.

D CLASS EXCLUSIVE SINGLE SEQUENTIAL TURBOCHARGER uses the compact, efficient design of a dual sided compressor wheel to help deliver maximum power quickly.

- **ENGINE EXHAUST BRAKING** helps provide better grade descent control with less brake and transmission wear and tear. Fully integrated with tow/haul mode, it provides increased engine braking at higher engine speeds.
- **LOWEST NVH IN THE CLASS** with a notably quieter, more refined sound than ever before, the result of meticulous attention paid to the designs of the combustion system, the engine block and the turbocharger.
- **CLEAREST SUPER DUTY DIESEL EVER** reduces nitrogen oxide (NOx) levels by more than 80% compared to last year.

BEST DIESEL

fuel economy, power and torque IN THE CLASS.

Ford 6.7L Power Stroke® V8 Turbo Diesel.

Designed, engineered and built by Ford, this heavy-duty diesel helps Super Duty® deliver up to a **20% IMPROVEMENT IN FUEL ECONOMY** over the previous model, making it the best in its class.⁴ It also gives you best-in-class horsepower and torque. We're talking **400 HP** and a massive **800 LB-FT. OF TORQUE**. That's a game-changing combination. And this **B20-CAPABLE** engine has already proven itself in over 10 million miles of cumulative testing. It's the **MOST TESTED POWER STROKE DIESEL ENGINE EVER**.

⁴Based on Ford drive cycle tests of comparably equipped 2011 Ford and 2010/2011 competitive models.

2011 SUPER DUTY®

ford.com



87. Having made representations about the Super Duty's fuel economy, that it's the "cleanest Super Duty diesel ever," and that it reduces NOx by 80%, Ford had a duty to disclose material facts regarding those representations, including the fact that the NOx reduction often only occurs when the vehicle operates in the conditions present in an emissions testing environment; that outside of the testing environment, the vehicles polluted heavily; and that the fuel economy was achieved by reduction of the emission controls in many common driving conditions.

88. The 2011 brochure also represented that the Super Duty has "best-in-class towing capabilities," but failed to disclose that this capability was only possible by software that turned emission controls down or off such that emissions can exceed standards by a factor of 30 to 50:



PULLS IT OFF
like **NO ONE ELSE** can.

Super Duty® reigns supreme with best-in-class towing capabilities* class-exclusive features and available systems like trailer sway control for **ULTIMATE TOWING CONFIDENCE**. A single touch of the brake pedal in tow/haul mode activates the integrated diesel engine-exhaust braking to help improve control with less wear and tear on the brakes and transmission.

BEST-IN-CLASS MAX. TOWING
Conventional: **17,500 LBS.²**
5th Wheel: **24,400 LBS.**

F-450 LARIAT Crew Cab 4x4 in White Platinum Tri-coat/Flat Matte Tie-Tone with available equipment

STANDARD TRAILER SWAY CONTROL uses a yaw motion sensor to monitor the motions of your truck and detect trailer sway. When trailer sway is detected, the system can automatically react by selectively braking, helping you **MAINTAIN CONTROL** of both the truck and the trailer. Super Duty is the only truck in its class with this system standard on both SRW and DRW models.

*When properly equipped. ¹Available early 2011. ²Remember that even advanced technology cannot overcome the laws of physics. It's always possible to lose control of a vehicle due to inappropriate driver input for the conditions.

2011 **SUPER DUTY***

ford.com



89. In its 2012 brochure, Ford again repeated its promises that the Super Duty is the “best-in-class” in “fuel economy,” that the engine was “the most tested Power Stroke diesel engine ever,” going through a “groundbreaking battery of

computer simulations,” even “loaded to the max” and “up the steepest grades.”

And Ford promised the “best diesel and gas fuel economy of any truck in its class”:⁹



OUTWORKS ALL THE REST.

This truck endured more torture testing than any generation of Ford Truck before it – including over 10 million cumulative miles on the most tested Power Stroke® diesel engine ever. A world-class team put this Super Duty® through a groundbreaking battery of computer simulations, lab and real-world tests – running it for thousands of hours on end in extreme conditions. Scorching heat. Bitter cold. Loaded to the max. Up the steepest grades. All to confirm that this truck is far more than the sum of its parts.

Super Duty is built to be the best – bringing you the best diesel and gas fuel economy of any truck in its class – plus lots of other capabilities and features only Ford can deliver.

Best In Class

- Fuel Economy: Diesel and Gas
- Max. Horsepower and Torque: Diesel and Gas
- Max. Conventional Towing: 17,500 lbs.²
- Max. 5th-Wheel Towing: 24,500 lbs.²
- Max. Payload: 7,110 lbs.

Class Exclusives

- Live-Drive Power TakeOff (PTO)³
- 5th-Wheel/Gooseneck Trailer Tow Prep Package³
- Standard Trailer Sway Control on both SRW and DRW
- LCD Productivity Screen³
- Standard Safety Canopy® System
- Tailgate Step³

F-350 Lariat Crew Cab 4x4, Golden Bronze/Pale Adobe two-tone. Available equipment.

¹Class is Full-Size Pickups over 8,500 lbs. GVWR. Based on Ford drive-cycle tests of comparably equipped 2011 Ford and 2010/2011 competitive models.

²When properly equipped vs. 2011/2012 competitors. 24,500 on F-450 Pickup, 7,110 on F-350 DRW Regular Cab 4x2. ³Available feature.



2012 SUPER DUTY® ford.com

⁹ Exhibit 8, Ford's 2012 Super Duty brochure.

90. The 2012 brochure repeated Ford's promise of a clean diesel:

Cleanest Super Duty diesel ever. This engine utilizes industry-proven technology and innovative Ford strategies to meet the latest federal emissions standards – reducing nitrogen oxide (NOx) levels by more than 80% compared to the previous generation diesel. For your part, just watch for a low diesel exhaust fluid (DEF) alert in the vehicle's message center, then locate the blue DEF fill cap next to your green diesel fuel cap and replenish the DEF supply. The reservoir holds 5 gallons of Ford-approved DEF, which can be purchased from your Ford Dealer or other authorized retailers.

91. Having made representations about fuel economy and the reduction of NOx, Ford had a duty to disclose material facts regarding those representations, including the fact that the NOx reduction only occurred when the vehicle operated in the conditions present in an emissions testing environment, but outside the testing environment the vehicles polluted heavily, and that the promised fuel economy was only achieved by reduction of the emission controls.

92. The 2012 brochure also repeated promises of “class-leading fuel economy” and “towing and payload capacities”:



F-350 LARIAT Crew Cab 4x4, Dark Blue Pearl/Sterling Gray two-tone. Available equipment.
¹Best-in-class maximum payload and towing when properly equipped. Class is Full-Size Pickups over 8,500 lbs. GVWR vs. 2011/2012 competitors.
²Based on Ford drive-cycle tests of comparably equipped 2011 Ford and 2010/2011 competitive models.

BUILT
FORD
TOUGH
2012 SUPER DUTY® ford.com

93. It is not plausible, given this “groundbreaking” testing, that Ford and Bosch did not know, as detailed below, that the emission controls do not work when the vehicle is operating in normal stop-and-go conditions, running under heavier loads, and going up modest to steep grades.

94. The 2012 brochure made additional representations about fuel

economy, horsepower, and torque, and the vehicle being the “cleanest Super Duty diesel ever”:

DIESEL BEATS THE COMPETITION 3 TIMES OVER.

The 6.7L Power Stroke® V8 Turbo Diesel – designed, engineered and built by Ford – helps this Super Duty® deliver up to a 20% improvement in fuel economy over the previous generation, making it the best in its class. It also gives you best-in-class horsepower and torque. We’re talking 400 hp and a massive 800 lb.-ft. of torque. That’s a game-changing combination. And this B20-capable engine has already proven itself in over 10 million miles of cumulative testing. It’s the most tested Power Stroke diesel engine ever.

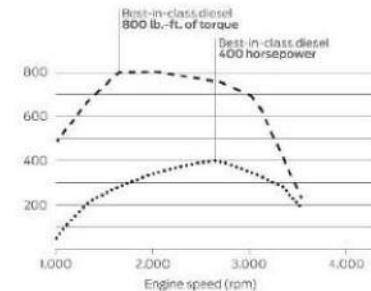


Delivers maximum power quickly. The diesel engine's class-exclusive single-sequential turbocharger features the compact, efficient design of a dual-sized compressor wheel.

Helps maintain the peace. With its notably quiet, refined sound, our diesel produces the lowest NVH in the class – the result of meticulous attention paid to the combustion system, engine block and turbocharger design.

Powers up fast any time the engine's running. Whether you're in motion or at a complete stop, you can power your loads with the diesel and our class-exclusive live-drive power take-off (PTO) provision. It keeps the job going with an output gear linked directly to the engine crankshaft.

Cleanest Super Duty diesel ever. This engine utilizes industry-proven technology and innovative Ford strategies to meet the latest Federal emissions standards – including nitrogen oxide (NOx) levels by more than 80% compared to the previous generation diesel. For your part, just watch for a low diesel exhaust fluid (DEF) alert in the vehicle's message center, then locate the 5-gal DEF fill cap next to your green diesel fuel cap and replenish the DEF supply. The reservoir holds 5 gallons of Ford-approved DEF, which can be purchased from your Ford dealer or other authorized retailers.



*Based on Ford drive-cycle tests of comparably equipped 2011 Ford and 2010/2011 competitive models. **Available feature.

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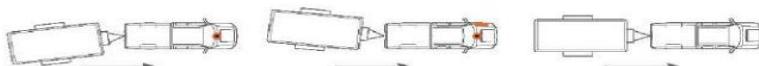
95. The 2012 brochure also represented that the Super Duty has best-in-class towing. Ford knew many consumers purchased heavy duty trucks to put a

load on them and that towing capacity was material. Ford did not disclose that emission controls are derated at common loads:



MASTERS THE HEAVIEST LOADS.

Super Duty® reigns supreme with best-in-class towing capabilities,¹ class-exclusive features and available systems like trailer sway control to help give you ultimate towing confidence. With the diesel powertrain, integrated engine-exhaust braking helps improve your control with less wear and tear on the brakes and transmission. It's the kind of functionality you'll really appreciate when you're hauling a heavy load or towing a trailer, and especially when you're descending steep grades.



Helps you keep it in line. Our standard trailer sway control² uses a yaw motion sensor to monitor the motions of your truck and detect trailer sway. It can automatically react when sway is detected by selectively braking to help you maintain control of both the truck and the trailer. Super Duty is the only truck in its class with this system standard on both SRW and DRW models.

F-350 XLT Crew Cab DRW 4x4, Ingot Silver, F-450 Lariat Crew Cab DRW 4x4, Black. Available equipment shown on each.

¹When properly equipped. ²Remember that even advanced technology cannot overcome the laws of physics. It's always possible to lose control of a vehicle due to inappropriate driver input for the conditions.



2012 SUPER DUTY® ford.com

96. In the brochure for the 2013 Super Duty, Ford repeated promises of

“best-in-class” diesel fuel economy and that it was the “cleanest Super Duty Diesel ever”:¹⁰

DIESEL BEATS THE COMPETITION 3 TIMES OVER.

Best-in-class horsepower, torque and fuel economy.¹ The 6.7L Power Stroke® V8 Turbo Diesel gives you all 3. With this advanced engine, Super Duty® delivers 400 hp, 800 lb.-ft. of torque, and up to a 20% improvement in fuel economy over the previous generation, making it the best in its class. Designed, engineered and built by Ford, the 6.7L features many innovative details including aluminum cylinder heads with precision dual water jackets that help minimize weight and maximize cooling. It's also the most tested Power Stroke diesel ever. This B20-capable engine has proven itself in over 10 million miles of cumulative testing under extreme conditions from 120°F scorching heat to -40°F bone-chilling cold. It's Built Ford Tough.[®]

Cleanest Super Duty diesel ever. This engine generation utilizes industry-proven technology and innovative Ford strategies to meet the latest federal emissions standards – reducing nitrogen oxide (NOx) levels by more than 80% compared to the previous-generation diesel. For your part, just watch for a low diesel exhaust fluid (DEF) alert in the vehicle's message center, then locate the blue DEF fill cap and replenish the DEF supply. The reservoir holds 5 gallons of Ford-approved DEF, which can be purchased from your Ford Dealer or other authorized retailers.

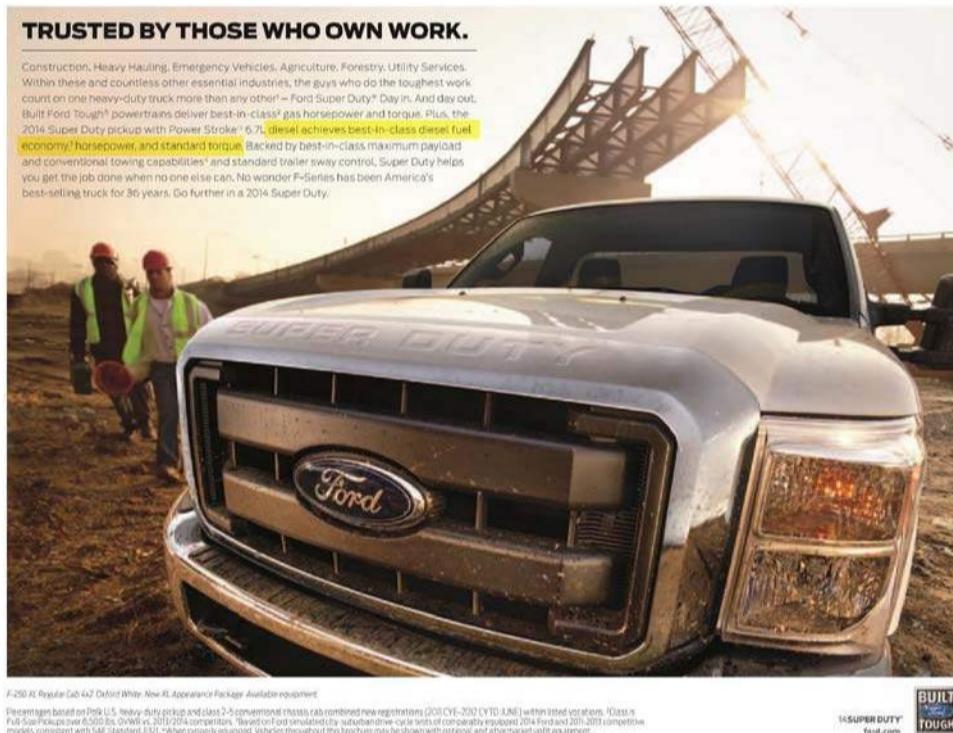
97. Having made representations about fuel economy and the reduction of NOx, Ford had a duty to disclose material facts regarding those representations, including the fact that the NOx reduction only occurred when the vehicle operated in the conditions present in an emissions testing environment, and that after outside of the testing environment the vehicles polluted heavily, and that the promised fuel economy was achieved by a reduction in the NOx emission controls.

98. The 2013 brochure also repeated representations from prior brochures about towing capacity and failed to disclose that at loads requiring more than 70–80% of rated torque for a particular engine speed (conditions that are very commonly experienced), the emissions systems are tuned to produce NOx levels 30–50 times the standard.

99. In the brochure for the 2014 Super Duty, Ford promised “best-in-class

¹⁰ Exhibit 9, Ford's 2013 Super Duty brochure.

diesel fuel economy" on the first page:¹¹



100. In the 2014 brochure, Ford promised that the Power Stroke was the “diesel leader” in fuel economy:

¹¹ Exhibit 10, Ford's 2014 Super Duty brochure.



¹Based on Ford simulated city-suburban drive-cycle tests of comparably equipped 2014 Ford and 2011-2013 competitive models, consistent with SAE Standard J1321. ²Available feature.

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101. Having made representations about fuel economy and the reduction of NOx, Ford had a duty to disclose material facts regarding those representations, including the fact that the NOx reduction only occurred when the vehicle operated in the conditions present in an emissions testing environment, and that outside of the testing environment the vehicles polluted heavily, and that the promised fuel economy was achieved by reduction of the emission controls. Ford also failed to disclose that “best-in-class torque” came at the expense of extreme NOx emissions.

102. The 2014 brochure also promised best-in-class towing capability without disclosing that such capability was only achieved by derating emission control.

103. The 2015 brochure continued to promise “improved power and

performance” and “best-in-class diesel fuel economy” from a “cleaner burn.”¹²

Best-in-class diesel fuel economy² is maintained with the help of new high-pressure fuel injectors that achieve a more efficient, cleaner burn.

104. Having made representations about fuel economy and the reduction of NOx, Ford had a duty to disclose material facts regarding those representations, including the fact that the NOx reduction only occurred when the vehicle operated in the conditions present in an emissions testing environment, and that outside the testing environment the vehicles polluted heavily, and that the fuel economy was achieved by reduction of the emission controls.

105. The 2015 brochure repeated the representation that the vehicles had undergone extensive testing under extreme conditions. Assuming this is true, it is not plausible that Ford and Bosch were unaware that emission controls did not function and were purposely not working during many common driving conditions.

106. The 2015 brochure also represented that it is the only truck in its class offering up to 31,200 pounds of towing capacity, but the brochure omitted the fact that emission controls are turned off or turned down under common load conditions, allowing emissions to exceed standards by 30 to 50 times.

107. The Ford 2016 brochure promised best-in-class diesel fuel economy from a “clean, efficient burn” on an engine “proven in over 12 million miles of

¹² Exhibit 11, Ford’s 2015 Super Duty brochure

cumulative testing":¹³



108. Having made representations about fuel economy and the reduction of NOx, Ford had a duty to disclose material facts regarding those representations, including the fact that the NOx reduction only occurred when the vehicle operated in the conditions present in an emissions testing environment, and that outside the testing environment the vehicles polluted heavily, and that the promised fuel economy was achieved by reduction of the emission controls.

109. The 2017 Super Duty brochure promised that the vehicles have been tested in the “real world,” not just on proving grounds. Ford knew that real-world

¹³ Exhibit 12, Ford's 2016 Super Duty brochure.

performance was material to consumers.¹⁴



110. Ford did not disclose real-world emissions performance, as detailed below.

111. The 2017 brochure continued Ford's promise of best-in-class towing capacity and "unparalleled diesel fuel economy."

¹⁴ Exhibit 13, Ford's 2017 Super Duty brochure.



112. The 2017 brochure post-dates the Volkswagen emissions scandal, which broke on September 16, 2015. This brochure no longer proclaims that the engine reduces NOx by 80% or that it's the "cleanest Super Duty diesel engine."

113. Likewise, the 2018 brochure also no longer proclaims that the engine reduces NOx by 80% or that it's the "cleanest Super Duty diesel engine."¹⁵

E. Bosch played a critical role in the defeat device scheme in many diesel vehicles in the United States, giving rise to the strong inference that Bosch played a key role in implementing the Ford emission strategy

¹⁵ Exhibit 14, Ford's 2018 Super Duty brochure.

114. Bosch's history with Volkswagen provides background and support for the plausibility of its participation in the RICO enterprise alleged herein, of which Bosch and Ford were participants. On information and belief, Plaintiff alleges that the same level of coordination between Bosch and Volkswagen also occurred between Bosch and Ford.

1. The Bosch EDC17

115. All modern engines are integrated with sophisticated computer components to manage the vehicle's operation, such as an electronic diesel control. Bosch GmbH tested, manufactured, and sold the EDC system used by Volkswagen, FCA, Mercedes, and General Motors. This system is more formally referred to as the Electronic Diesel Control Unit 17 ("EDC Unit 17" or "ED17"). Upon its introduction, EDC Unit 17 was publicly touted by Bosch as follows:¹⁶

EDC17 . . . controls every parameter that is important for effective, low-emission combustion.

Because the computing power and functional scope of the new EDC17 can be adapted to match particular requirements, it can be used very flexibly in any vehicle segment on all the world's markets. In addition to controlling the precise timing and quantity of injection, exhaust gas recirculation, and manifold pressure regulation, it also offers a large number of options such as the control of particulate filters or systems for reducing nitrogen oxides. The Bosch EDC17 determines the injection parameters for each cylinder,

¹⁶ See Exhibit 15, Bosch Press Release, *The brain of diesel injection: New Bosch EDC17 engine management system* (Feb. 28, 2006), <http://www.bosch-presse.de/presseforum/details.htm?txtID=2603&locale=en>.

making specific adaptations if necessary. This improves the precision of injection throughout the vehicle's entire service life. The system therefore makes an important contribution to observing future exhaust gas emission limits.

116. Bosch worked with each vehicle manufacturer that utilized EDC Unit 17 to create a unique set of specifications and software code to manage the vehicles' engine operation.

117. Bosch's EDC Unit 17 controls emissions by periodically reading sensor values, evaluating a control function, and controlling actuators based on the control signal.¹⁷ Sensor readings include crankshaft position, air pressure, air temperature, air mass, fuel temperature, oil temperature, coolant temperature, vehicle speed, exhaust oxygen content, as well as driver inputs such as accelerator pedal position, brake pedal position, cruise control setting, and selected gear.

Based on sensor input, EDC17 controls and influences the fuel combustion process including, in particular, fuel injection timing, which affects engine power, fuel consumption, and the composition of the exhaust gas.¹⁸

118. All Bosch ECUs, including the EDC17, run on complex, highly proprietary engine management software over which Bosch exerts near-total control. In fact, the software is typically locked to prevent customers, like Ford, from making significant changes on their own. Accordingly, both the design and

¹⁷ See Exhibit 16, Moritz Contag *et al.*, How They Did It: An Analysis of Emission Defeat Devices in Modern Automobiles, p.4 (2017).

¹⁸ *Id.*

implementation are interactive processes, requiring Bosch's close collaboration with the automaker from beginning to end.

119. With respect to the Polluting Vehicles, the EDC 17 was used surreptitiously to evade emissions regulations. Bosch and Ford worked together to develop and implement a specific set of software algorithms for implementation in the Polluting Vehicles, including algorithms to adjust fuel levels, exhaust gas recirculation, air pressure levels, and urea injection rates in vehicles equipped with SCR systems.

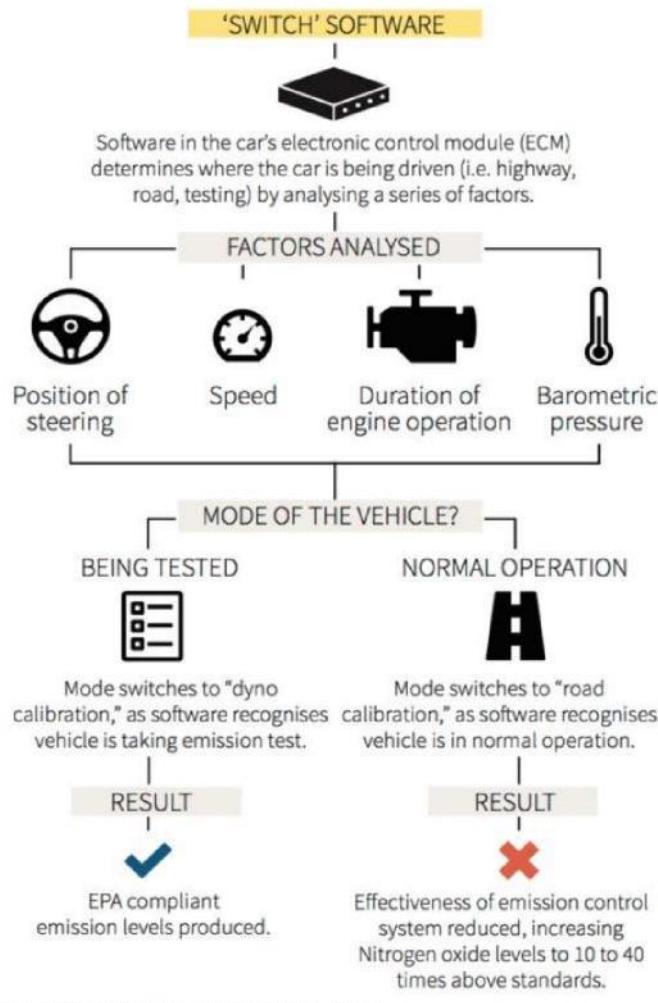
120. Bosch and Ford worked together to develop and implement a specific set of software algorithms for implementation in the Polluting Vehicles, which enabled Ford to adjust fuel levels, exhaust gas recirculation, air pressure levels, and even urea injection rates (for applicable vehicles).¹⁹ When carmakers test their vehicles against EPA emission standards, they place their vehicles on dynamometers (large rollers) and then perform a series of specific maneuvers prescribed by federal regulations. Bosch's EDC Unit 17 gave Volkswagen, General Motors, Ford and other manufacturers the power to detect test scenarios by monitoring vehicle speed, acceleration, engine operation, air pressure, and even the position of the steering wheel. When the EDC Unit 17's detection algorithm

¹⁹ See, e.g., Exhibit 17, *Engine management*, Bosch Auto Parts, http://de.bosch-automotive.com/en/parts_and_accessories/motor_and_systems/diesel/engine_management_2/engine_control_unit_1.

detected that the vehicle was on a dynamometer (and undergoing an emission test), additional software code within the EDC Unit 17 downgraded the engine's power and performance and upgraded the emission control systems' performance by switching to a "dyno calibration" to cause a subsequent reduction in emissions to legal levels. Once the EDC Unit 17 detected that the emission test was complete, the EDC Unit would then enable a different "road calibration" that caused the engine to return to full power while reducing the emission control systems' performance, and consequently caused the vehicle to spew the full amount of illegal NOx emissions out on the road in certain conditions.²⁰ This process is illustrated in the following diagram, applicable to Ford as well:

²⁰ Exhibit 18, Russell Hotten, *Volkswagen: The scandal explained*, BBC (Dec. 10, 2015), <http://www.bbc.com/news/business-34324772>.

How Volkswagen's defeat device works



Source: U.S. Environmental Protection Agency

J. Wang, 22/09/2015

REUTERS

121. This workaround was illegal. The Clean Air Act expressly prohibits defeat devices, defined as any auxiliary emission control device “that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use.” 40 C.F.R. § 86.1803-01; *see also id.* § 86.1809-10 (“No new light-duty vehicle, light-duty truck, medium-duty passenger vehicle, or complete heavy-duty vehicle shall

be equipped with a defeat device.”). Moreover, the Clean Air Act prohibits the sale of components used as defeat devices “where the person knows or should know that such part or component is being offered for sale or installed for such use or put to such use.” 42 U.S.C. § 7522(a)(3). Finally, in order to obtain a certificate of compliance (COC), automakers must submit an application that lists all auxiliary emission control devices installed in the vehicle, a justification for each, and an explanation of why the control device is not a defeat device.

122. Thus, in order to obtain the COCs necessary to sell their vehicles, Ford did not disclose, and affirmatively concealed from government regulators, the presence of the test-detecting and performance-altering software code that it developed with Bosch, thus making that software an illegal defeat device. In other words, Ford, working closely with Bosch, lied to the government, its customers, its dealers, and the public at large.

123. Because the COCs were fraudulently obtained, and because the Polluting Vehicles did not conform “in all material respects” to the specifications provided in the COC applications, the Polluting Vehicles were never covered by a valid COC, and thus were never legal for sale, nor were they EPA- and/or CARB-compliant as represented. Ford and Bosch hid these facts from the EPA, CARB and other regulators, its dealers, and consumers, and it continued to sell and lease the Polluting Vehicles to the driving public despite their illegality and with the

complicity of Bosch.

124. Ford's illegal workaround was enabled by its close partnership with Bosch, which enjoyed a sizable portion of its annual revenue from manufacturing parts used in Ford's and other manufacturers' diesel vehicles.²¹ Bosch was well aware that Ford was using its emission control components as a defeat device and, in fact, worked with Ford to develop the software algorithm specifically tailored for the Polluting Vehicles.

125. Because the COCs were fraudulently obtained, the Polluting Vehicles were never covered by valid COCs and thus were never offered legally for sale. Ford hid these facts from the EPA, CARB and other state regulators, and consumers, and it continued to sell and lease the Polluting Vehicles despite their illegality and with the complicity of Bosch.

2. Volkswagen and Bosch conspire to develop the illegal defeat device

126. Bosch tightly controlled development of the control units in the Polluting Vehicles and actively participated in the development of the defeat device.

²¹ Approximately 50,000 of Bosch's 375,000 employees worked in the diesel technology operations branch of Bosch, and Volkswagen was the biggest diesel manufacturer in the world. *See Exhibit 19, Bosch probes whether its staff helped VW's emissions rigging*, Automotive News (Jan. 27, 2016), <http://www.autonews.com/article/20160127/COPY01/301279955/bosch-probes-whether-its-staff-helped-vws-emissions-rigging>.

127. As discussed above, Bosch introduced a new generation of diesel ECUs for Volkswagen.

128. A February 28, 2006 Bosch press release introduced the “New Bosch EDC17 engine management system” as the “brain of diesel injection” which “controls every parameter that is important for effective, low-emission combustion.” The EDC17 offered “[e]ffective control of combustion” and a “[c]oncept tailored for all vehicle classes and markets.” In the press release, Bosch touted the EDC17 as follows:²²

EDC17: Ready for future demands

Because the computing power and functional scope of the new EDC17 can be adapted to match particular requirements, it can be used very flexibly in any vehicle segment on all the world’s markets. In addition to controlling the precise timing and quantity of injection, exhaust gas recirculation, and manifold pressure regulation, it also offers a large number of options such as the control of particulate filters or systems for reducing nitrogen oxides. The Bosch EDC17 determines the injection parameters for each cylinder, making specific adaptations if necessary. This improves the precision of injection throughout the vehicle’s entire service life. The system therefore makes an important contribution to observing future exhaust gas emission limits.

129. Bosch and Volkswagen worked together closely to modify the

²² See Exhibit 15, Bosch press release, *The brain of diesel injection: New Bosch EDC17 engine management system* (Feb. 28, 2006), <http://www.bosch-presse.de/presseforum/details.htm?txtID=2603&locale=en>.

software and to create specifications for each Volkswagen vehicle model. Indeed, customizing a road-ready ECU is an intensive three- to five-year endeavor involving a full-time Bosch presence at an automaker's facility. Such was the case with Ford as well.

130. All Bosch ECUs, including the EDC17, run on complex, highly proprietary engine management software over which Bosch exerts nearly total control. In fact, the software is typically locked to prevent customers, like Volkswagen and Ford, from making significant changes on their own.

131. Bosch's security measures further confirm that its customers cannot make significant changes to Bosch software without Bosch involvement. Bosch boasts that its security modules protect vehicle systems against unauthorized access in every operating phase, meaning that no alteration could have been made without either a breach of that security—and no such claims have been advanced—or Bosch's knowing participation.²³

132. Unsurprisingly, then, at least one car company engineer has confirmed that Bosch maintains absolute control over its software as part of its regular business practices.²⁴

²³ Exhibit 20, *Reliable Protection for ECUs*, ESCRYPt (May 12, 2016), <https://www.escrypt.com/en/news-events/protection-for-ecus>.

²⁴ Exhibit 21, Michael Taylor, *EPA Investigating Bosch over VW Diesel Cheater Software*, Car and Driver (Nov. 23, 2015), <http://blog.caranddriver.com/epa-investigating-bosch-over-vw-diesel-cheater-software/>.

I've had many arguments with Bosch, and they certainly own the dataset software and let their customers tune the curves. Before each dataset is released it goes back to Bosch for its own validation.

Bosch is involved in all the development we ever do. They insist on being present at all our physical tests and they log all their own data, so someone somewhere at Bosch will have known what was going on.

All software routines have to go through the software verification of Bosch, and they have hundreds of milestones of verification, that's the structure

The car company is never entitled by Bosch to do something on their own.

133. Thus, Bosch GmbH and Bosch LLC cannot convincingly argue that the development of the Volkswagen defeat device was the work of a small group of rogue engineers.

134. In fact, Volkswagen's and Bosch's work on the EDC17 reflected a highly unusual degree of coordination. It was a massive project that required the work of numerous Bosch coders for a period of more than ten years, or perhaps more.²⁵ Although Bosch publicly introduced the EDC17 in 2006, it had started to

²⁵ Approximately 50,000 of Bosch's 375,000 employees worked in the diesel technology operations branch of Bosch, and Volkswagen was the biggest diesel manufacturer in the world. *See Exhibit 19, Bosch Probes Whether Its Staff Helped VW's Emissions Rigging*, Automotive News (Jan. 27, 2016), <http://www.autonews.com/article/20160127/COPY01/301279955/bosch-probes-whether-its-staff-helped-vws-emissions-rigging>.

develop the engine management system years before.²⁶

135. In fact, Bosch was in on the secret and knew that Volkswagen was using Bosch's software algorithm as an "on/off" switch for emission controls when the vehicles were undergoing testing. As noted above, it has been said the decision to cheat was an "open secret" at Volkswagen.²⁷ It was an "open secret" at Bosch as well.

136. Volkswagen and Bosch personnel employed code language for the defeat device, referring to it as the "acoustic function" (in German, "akustikfunktion"). As described above, the roots of the "akustikfunktion"—and likely the cheating—can be traced back to the late 1990s when Audi devised software called the "akustikfunktion" that could switch off certain functions when the vehicle was in a test mode.²⁸ The "akustik" term is derived from the function's

²⁶ Exhibit 15, Bosch press release, *The brain of diesel injection: New Bosch EDC17 engine management system* (Feb. 28, 2006), <http://www.bosch-presse.de/presseforum/details.htm?txtID=2603&locale=en>.

²⁷ Exhibit 22, Georgina Prodham, *Volkswagen probe finds manipulation was open secret in department*, Reuters (Jan. 23, 2016), <http://www.reuters.com/article/us-volkswagen-emissions-investigation-idUSKCN0V02E7>. See also Exhibit 23, Jay Ramey, *VW chairman Poetsch: Company 'tolerated breaches of rules'*, Autoweek (Dec. 10, 2015), <http://autoweek.com/article/vw-diesel-scandal/vw-chairman-poetsch-company-tolerated-breaches-rules> (it was necessary for the "EA 189 engine to pass U.S. diesel emissions limits within the budget and time frame allotted").

²⁸ Exhibit 24, Martin Murphy, *Dieselgate's Roots Stretch Back to Audi*, Handelsblatt Global (Apr. 19, 2016), <https://global.handelsblatt.com/edition/413/ressort/companies-markets/article/dieselgates-roots-stretch-back-to-audi?ref=MTI5ODU1>.

ability to modify the noise and vibration produced by the engine. News articles report that, in 2006, Volkswagen further developed this “akustikfunktion” for the affected vehicles.²⁹

137. In sum, Bosch GmbH worked hand-in-glove with Volkswagen to develop and maintain the akustikfunktion/defeat device. On information and belief, it did so with Ford as well.

2. Volkswagen and Bosch conspire to conceal the illegal “akustikfunktion”

138. By 2007, and likely earlier, Bosch GmbH was critical not only in developing the “akustikfunktion” but also in concealing it.

139. 216. Bosch GmbH was concerned about getting caught participating in the defeat device fraud. As reported in a German newspaper, Bild am Sonntag, and a French publication, a Volkswagen internal inquiry found that in 2007, Bosch

²⁹ Exhibit 22, Georgina Prodham, *Volkswagen probe finds manipulation was open secret in department*, Reuters (Jan. 23, 2016), <http://www.reuters.com/article/us-volkswagen-emissions-investigation-idUSKCN0V02E7>. Volkswagen Group Chairman Hans Dieter Poetsch explained that a small group of engineers and managers was involved in the creation of the manipulating software. *See Exhibit 23, Jay Ramey, VW chairman Poetsch: Company ‘tolerated breaches of rules’*, Autoweek (Dec. 10, 2015), <http://autoweek.com/article/vw-diesel-scandal/vw-chairman-poetsch-company-tolerated-breaches-rules>. *See also Exhibit 18, Russell Hotten, Volkswagen: The scandal explained*, BBC (Dec. 10, 2015), <http://www.bbc.com/news/business-34324772>; Exhibit 25, Matt Burt, *VW emissions scandal: how Volkswagen’s ‘defeat device’ works*, Autocar (Sept. 23, 2015), <http://www.autocar.co.uk/car-news/industry/vw-emissions-scandal-how-volkswagens-defeat-device-works>.

GmbH warned Volkswagen by letter that using the emissions-altering software in production vehicles would constitute an “offense.”³⁰

3. Volkswagen and Bosch conspire in the United States and Germany to elude U.S. regulators who regulated not just Volkswagen diesels but all diesels

140. The purpose of the defeat device was to evade stringent U.S. emissions standards. Once Bosch GmbH, Bosch LLC, and Volkswagen perfected the defeat device, therefore, their attention turned to deceiving U.S. regulators not just for the benefit of Volkswagen but also for the benefit of Ford, Mercedes, General Motors, and FCA.

141. Bosch’s North American subsidiary, Defendant Robert Bosch LLC, was also part of and essential to the fraud. Bosch LLC worked closely with Bosch GmbH and Volkswagen in the United States and in Germany to ensure that the non-compliant affected vehicles passed U.S. emissions tests. Bosch LLC employees frequently communicated with U.S. regulators and actively worked to ensure the affected vehicles were approved by regulators.

142. Employees of Bosch LLC, Bosch GmbH, and IAV provided specific information to U.S. regulators about how Volkswagen’s vehicles functioned and

³⁰ Exhibit 26, *Bosch warned VW about illegal software use in diesel cars, report says*, Automotive News (Sept. 27, 2015), <http://www.autonews.com/article/20150927/COPY01/309279989/bosch-warned-vw-about-illegal-software-use-in-diesel-cars-report-says>; Exhibit 27, *VW Scandal: Company Warned over Test Cheating Years Ago*, BBC (Sept. 27, 2015), <http://www.bbc.com/news/business-34373637>.

unambiguously stated that the vehicles met emissions standards. Bosch LLC regularly communicated to its colleagues and clients in Germany about ways to deflect and diffuse questions from U.S. regulators about the affected vehicles — particularly CARB.

4. Bosch keeps Volkswagen’s secret safe and pushes “clean” diesel in the United States as a concept applicable to all diesel car manufacturers

143. During the time of its lobby efforts, Bosch LLC and Bosch GmbH were each aware that Ford, General Motors, Volkswagen, Audi, Porsche, FCA, and Mercedes could not meet emissions requirements without turning down or derating emission controls. Bosch not only kept Volkswagen’s dirty secret safe, it went a step further and actively lobbied lawmakers to push “clean diesel” in the United States, including making affected vehicles available for regulators to drive.

144. As early as 2004, Bosch announced a push to convince U.S. automakers that its diesel technology could meet tougher 2007 U.S. emission standards.³¹ Its efforts ended up being a multi-year, multi-million dollar effort involving key players from both Robert Bosch GmbH in Germany and Bosch LLC in the United States.

145. Bosch’s promotion of diesel technology specifically targeted the

³¹ Exhibit 28, Edmund Chew, *Bosch boosts US diesel lobbying*, Autonews (Mar. 8, 2004), <http://www.autonews.com/article/20040308/SUB/403080876/bosch-boosts-us-diesel-lobbying>.

United States. For example, Bosch put on “California Diesel Days”³² and “SAE World Congress in Detroit.”³³ In 2008, Bosch LLC and Volkswagen America co-sponsored the “Future Motion Made in Germany-Second Symposium on Modern Drive Technologies” at the German Embassy in Washington, D.C., with the aim of providing a venue for “stakeholders to gain insight into the latest technology trends and engage in a vital dialogue with industry leaders and policymakers.”³⁴

146. Bosch LLC hosted multi-day conferences open to many regulators and legislators and held private meetings with regulators in which it proclaimed extensive knowledge of the specifics of Volkswagen technology, including calibrations necessary for the affected vehicles to comply with emissions regulations.

147. In April 2009, Bosch LLC organized and hosted a two-day “California Diesel Days” event in Sacramento, California. Bosch invited a roster of lawmakers, journalists, executives, regulators, and NGOs³⁵ with the aim of

³² Exhibit 29, *Bosch drives clean diesel in California*, Bosch, http://www.bosch.us/content/language1/html/734_4066.htm?section=28799C0E86C147799E02226E942307F2.

³³ See, e.g., Exhibit 30, *Bosch Brings Innovation, Green Technology to SAE 2009 World Congress*, Bosch, http://www.bosch.us/content/language1/html/734_7432.htm?section=CDAF31A468D9483198ED8577060384B3.

³⁴ Exhibit 31, *Bosch: Clean Diesel is Key Part of Future Technology Mix*, Bosch.

³⁵ Exhibit 29, *Bosch drives clean diesel in California*, Bosch, http://www.bosch.us/content/language1/html/734_4066.htm?section=28799C0E86C147799E02226E942307F2; see also Exhibit 32, *California Diesel Days*, The

changing perceptions of diesel from “dirty” to “clean.” The event featured affected vehicles as ambassadors of “clean diesel” technology, including a 2009 Volkswagen Jetta “green car.” The stated goals were to “build support for light-duty diesel as a viable solution for achieving California’s petroleum and emission reduction objectives.”

148. In 2009, Bosch also became a founding member of the U.S. Coalition for Advanced Diesel Cars.³⁶ One of this advocacy group’s purposes included “promoting the energy efficiency and environmental benefits of advanced clean diesel technology for passenger vehicles in the U.S. marketplace.”³⁷ This group lobbies Congress, U.S. regulators, and CARB in connection with rules affecting “clean diesel” technology.³⁸

149. In 2010, Bosch sponsored the Virginia International Raceway with the support of the 2010 Volkswagen Jetta TDI Cup Series. This event included TDI vehicles featuring Bosch technology.³⁹

U.S. Coalition for Advanced Diesel Cars, <http://www.californiadieseldays.com/>.

³⁶ Exhibit 33, Chrissie Thompson, New Coalition Aims To Promote Diesel Cars, Automotive News (Feb. 2, 2009),

<http://www.autonews.com/article/20090202/OEM06/302029728/new-coalition-aims-to-promote-diesel-cars>.

³⁷ Exhibit 34, *About the Coalition*, The U.S. Coalition for Advanced Diesel Cars, <http://cleandieseldelivers.com/about/>.

³⁸ *Id.* See also, e.g., Exhibit 35, Letter to Chairman Mary Nichols and CARB concerning a statement made about diesel technology (Jan. 8, 2016), available at <http://cleandieseldelivers.com/media/Mary-Nichols-Letter-01082016.pdf>.

³⁹ Exhibit 36, Volkswagen Jetta TDI Cup Drivers Take to the Track for the First

150. In 2012, Audi, BMW, Bosch, Daimler, Porsche, and Volkswagen joined to form The Clearly Better Diesel initiative.⁴⁰ The initiative was announced in Berlin by the German Association of the Automotive Industry. Its stated goal was to promote the sale of clean diesel vehicles in the United States. The initiative's slogan was "Clean Diesel. Clearly Better."

151. In its efforts to promote "clean diesel," including the affected vehicles, Bosch GmbH acted on behalf of its global group.

5. Bosch also made the EDC17 found in FCA vehicles that pollute excessively

152. To appeal to environmentally conscious consumers, FCA vigorously markets its "EcoDiesel" vehicles as "clean diesel" with ultra-low emissions, high fuel economy, and powerful torque and towing capacity. FCA calls its EcoDiesel "ultra clean," "emissions compliant," and claims that "no NOx" exits the tailpipe. FCA charges a premium for EcoDiesel-equipped vehicles. For example, selecting the 3.0-liter EcoDiesel engine for the 2016 Dodge Ram 1500 Laramie adds \$4,770 to the purchase price. And the 2016 Jeep Grand Cherokee Overland EcoDiesel costs \$4,500 more than its gasoline counterpart.

153. These representations are deceptive and false. FCA programmed its

Time in 2010 at VIR, Volkswagen of America, Inc. (April 23, 2010).

⁴⁰ Exhibit 37, "Clean Diesel Clearly Better" Campaign for Clean Diesel Cars Welcomed, Diesel Technology Forum (Dec. 12, 2012), available at <http://www.prnewswire.com/news-releases/clean-diesel-clearly-better-campaign-for-clean-diesel-cars-welcomed-183261432.html>.

EcoDiesel vehicles to significantly reduce the effectiveness of the NOx reduction systems during real-world driving conditions. The EPA has determined that the affected vehicles contain defeat devices. After a lawsuit had already been filed by Plaintiff's counsel in this case, on January 12, 2017, the EPA issued a Notice of Violation against FCA because FCA "failed to disclose Auxiliary Emission Control Devices (AECDs)" in the affected vehicles.⁴¹ The EPA identified eight specific devices that cause the vehicle to perform effectively when being tested for compliance and then reduce the effectiveness of the emission control system during normal operation and use.

154. "Once again," said CARB Chair Mary D. Nichols about FCA's cheating, "a major automaker made the business decision to skirt the rules and got caught."⁴²

155. The same experts that tested the Super Duty's performance did on-road testing of the FCA vehicles and confirmed that FCA's so-called EcoDiesel vehicles produced NOx emissions at an average of 222 mg/mile in city driving (four times the FTP standard of 50 mg/mile) and 353 mg/mile in highway driving (five times higher than the U.S. highway standard of 70 mg/mile). In many

⁴¹ Exhibit 38, EPA's January 12, 2017 Notice of Violation to FCA, available at <https://www.epa.gov/sites/production/files/2017-01/documents/fca-caa-nov-2017-01-12.pdf>.

⁴² Exhibit 39, EPA News Release, EPA Notifies Fiat Chrysler of Clean Air Act Violations (Jan.12, 2017), available at <https://www.epa.gov/newsreleases/epa-notifies-fiat-chrysler-clean-air-act-violations>.

instances, NOx values were in excess of 1,600 mg/mile, more than 20 times the standards. This testing uncovered many of the defeat devices listed in the EPA notice of violation ahead of EPA's announcement.

156. Bosch made the EDC17 for the polluting FCA vehicles.

6. Bosch GmbH also made the EDC17 found in polluting Mercedes diesels

157. Plaintiff's experts in this case tested the Mercedes diesel vehicles and made the first public disclosure of Mercedes' unlawful conduct through certain of the counsel in this case in a civil suit filed in the District of New Jersey. Reportedly as a result of that lawsuit, Mercedes is under investigation by the Department of Justice and German authorities with respect to its BlueTEC diesel vehicles. Over 14 Mercedes diesel models are alleged to produce emissions 8.1 to 19.7 times relevant standards. Bosch GmbH supplied the EDC17 in the polluting Mercedes vehicles.

7. Bosch GmbH also made the EDC17 found in 700,000 polluting General Motors trucks

158. Bosch made the EDC17 found in the 2011–2016 General Motors Sierra 2500 and 3500 HD trucks and Chevrolet Silverado HD trucks. These trucks are competitors with Ford's Super Duty trucks.

159. Bosch supplied the software and function sheets for these vehicles and enabled the vehicles to have three different cheat devices.

160. GM Defeat Device No. 1 reduces or derates the emissions system when temperatures are above the emissions certification test range (86°F). GM Defeat Device No. 2 operates to reduce emission control when temperatures are below the emissions certification low temperature range (68°F). Testing reveals that at temperatures below 68°F (the lower limit of the certification test temperature), stop-and-go emissions are 2.1 times the emissions standard at 428 mg/mile (the standard is 200 mg/mile). At temperatures above 86°F, stop-and-go emissions are an average of 2.4 times the standard with some emissions as high as 5.8 times the standard. Based on temperatures in the top 30 metropolitan areas, these vehicles are operating with the emissions systems derated a material amount of their vehicle miles travelled. But the emission scheme is a step more nefarious: enter GM Defeat Device No. 3, which reduces the level of emission controls after 200–500 seconds of steady speed operation in all temperature windows, causing emissions to increase on average of a factor of 4.5. Based on a study of temperatures in 30 major metropolitan areas as well as the demographics of Silverado and Sierra sales, Plaintiff's experts estimate that due to just the temperature-triggered defeat devices, the vehicles operate at 65–70% of their miles driven with emissions that are 2.1 to 5.8 times the standard.

161. Increased sales and thus increased profits drove General Motors to use at least these three defeat devices in its Duramax diesel engines. By reversing the

traditional order of the exhaust treatment components and putting the Selective Catalytic Reduction (SCR) in front of the Diesel Particulate Filter (DPF), General Motors could obtain and market higher power and fuel efficiency from its engines while still passing the cold-start emissions certification tests. This made the trucks more appealing and competitive in the marketplace, driving up sales and profits. But the reordering would have also drastically increased the need to employ Active Regeneration (i.e., burning off collected soot at a high temperature) and other power- and efficiency-sapping exhaust treatment measures, reversing the very advantage gained. General Motors' solution, with the participation of Defendants Robert Bosch GmbH and Robert Bosch LLC, was to install defeat devices to purposefully reduce SCR dosing, increase NOx emissions, and thus decrease Active Regeneration. The defeat devices allowed General Motors to have its cake and eat too. It could gain the advantage of hot exhaust going into the SCR system needed to pass cold-start tests, while avoiding the fuel- and power-robbing Active Regeneration procedure that the DPF filter requires when the SCR treatment comes first. General Motors turned a blind eye to the twofold to fivefold increase in deadly NOx emissions its scheme caused all to drive up its sales and profits.

H. The damage from excessive NOx

1. Environmental harm

162. NOx contributes to ground-level ozone and fine particulate matter.

According to the EPA, “[e]xposure to these pollutants has been linked with a range of serious health effects, including increased asthma attacks and other respiratory illnesses that can be serious enough to send people to the hospital. Exposure to ozone and particulate matter have also been associated with premature death due to respiratory-related or cardiovascular-related effects. Children, the elderly, and people with pre-existing respiratory disease are particularly at risk for health effects of these pollutants.”

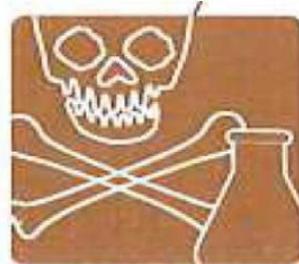
163. The EPA describes the danger of NOx as follows:

Acid Rain - NO_x and sulfur dioxide react with other substances in the air to form acids which fall to earth as rain, fog, snow, or dry particles. Some may be carried by the wind for hundreds of miles. Acid rain damages forests; causes deterioration of cars, buildings, and historical monuments; and causes lakes and streams to become acidic and unsuitable for many fish.



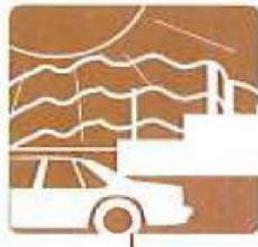
Water Quality Deterioration
 - Increased nitrogen loading in water bodies, particularly coastal estuaries, upsets the chemical balance of nutrients used by aquatic plants and animals. Additional nitrogen accelerates “eutrophication,” which leads to oxygen depletion and reduces fish and shellfish populations. NO_x emissions in the air are one of the largest sources of nitrogen pollution to the Chesapeake Bay.

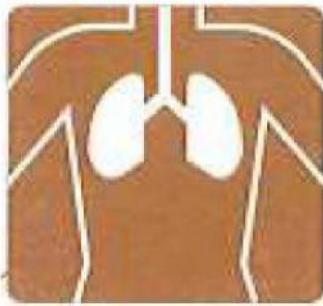




Toxic Chemicals - In the air, NO_x reacts readily with common organic chemicals, and even ozone, to form a wide variety of toxic products, some of which may cause biological mutations. Examples of these chemicals include the nitrate radical, nitroarenes, and nitrosamines.

Ground-level Ozone (Smog) - is formed when NO_x and volatile organic compounds (VOCs) react in the presence of heat and sunlight. Children, the elderly, people with lung diseases such as asthma, and people who work or exercise outside are susceptible to adverse effects such as damage to lung tissue and reduction in lung function. Ozone can be transported by wind currents and cause health impacts far from the original sources. Millions of Americans live in areas that do not meet the health standards for ozone. Other impacts from ozone include damaged vegetation and reduced crop yields.





Particles - NO_x react with ammonia, moisture, and other compounds to form nitric acid vapor and related particles. Human health concerns include effects on breathing and the respiratory system, damage to lung tissue, and premature death. Small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and aggravate existing heart disease.



Global Warming - One member of the NO_x family, nitrous oxide, is a greenhouse gas. It accumulates in the atmosphere with other greenhouse gases causing a gradual rise in the earth's temperature. This will lead to increased risks to human health, a rise in the sea level, and other adverse changes to plant and animal habitat.

164. A recent study published in NATURE estimates that there are 38,000 deaths worldwide due to excess NO_x emissions.

2. Economic harm

165. Ford and Bosch will not be able to make the Polluting Vehicles comply with emissions standards without substantially degrading their performance characteristics, including their horsepower and their fuel efficiency. As a result, even if Ford and Bosch are able to make the Polluting Vehicles EPA-compliant, Class members will nonetheless suffer actual harm and damages because their vehicles will no longer perform as they did when purchased and as advertised. This will necessarily result in a diminution in value of every Polluting

Vehicle and it will cause owners of Polluting Vehicles to pay more for fuel while using their Polluting Vehicles; and it results in Class members overpaying for their vehicles at the time of purchase.

166. Plaintiff and members of the Class paid a premium of nearly \$8,400, as Ford charged more for its Super Duty engine than a comparable gas engine based on features that were falsely advertised including the cleanliness of the emissions; fuel performance; and durability.

167. As a result of Ford's unfair, deceptive, and/or fraudulent business practices, and its failure to disclose that under normal operating conditions the Polluting Vehicles are not "clean" diesels, emit more pollutants than do gasoline-powered vehicles, and emit more pollutants than permitted under federal and state laws, owners and/or lessees of the Polluting Vehicles have suffered losses in money and/or property. Had Plaintiff and Class members known of the higher emissions at the time they purchased or leased their Polluting Vehicles, or had they known of the effects on fuel economy if the emissions were not manipulated, they would not have purchased or leased those vehicles, or would have paid substantially less for the vehicles than they did. Moreover, when and if Ford recalls the Polluting Vehicles and degrades the Ford clean diesel engine performance and fuel efficiency in order to make the Polluting Vehicles compliant with EPA standards, Plaintiff and Class members will be required to spend additional sums

on fuel and will not obtain the performance characteristics of their vehicles when purchased. Moreover, Polluting Vehicles will be worth less in the marketplace because of their decrease in performance and efficiency and increased wear on the engines, when or if these vehicles are fixed.

168. Without cheating emissions, Ford could not achieve the fuel economy and range that it promises. Moreover, when and if Ford recalls the Polluting Vehicles and degrades the engine performance in order to make the Polluting Vehicles compliant with EPA standards, Plaintiff and Class members will be required to spend additional sums on fuel and will not obtain the performance characteristics of their vehicles as promised when purchased. And Polluting Vehicles will necessarily be worth less in the marketplace because of their decrease in performance and efficiency and increased wear on the vehicles' engines, and this results in an overpayment by Plaintiff at the time of purchase.

169. Plaintiff has also been harmed and injured by the fact that Plaintiff unwittingly purchased a vehicle that was not legally on the road and that was polluting in volumes and manners a reasonable consumer would not expect. This harm can be measured through economic analysis.

VI. TOLLING OF THE STATUTE OF LIMITATIONS

A. Discovery rule tolling

170. Class members had no way of knowing about Ford's deception with

respect to the comparatively and unlawfully high emissions of its Ford clean diesel engine system in the Polluting Vehicles. To be sure, Ford continues to market the Polluting Vehicles as “clean” diesels that have lower emissions than gasoline vehicles and also continues to claim that the Polluting Vehicles comply with EPA emissions standards.

171. Within the period of any applicable statutes of limitation, Plaintiff and members of the proposed Classes could not have discovered through the exercise of reasonable diligence that Ford was concealing the conduct complained of herein and misrepresenting the company’s true position with respect to the emission qualities of the Polluting Vehicles.

172. Plaintiff and the other Class members did not discover, and did not know of, facts that would have caused a reasonable person to suspect that Ford did not report information within its knowledge to federal and state authorities, its dealerships, or consumers; nor would a reasonable and diligent investigation have disclosed that Ford had concealed information about the true emissions of the Polluting Vehicles, which was discovered by Plaintiff only shortly before this action was filed. Nor in any event would such an investigation on the part of Plaintiff and other Class members have disclosed that Ford valued profits over truthful marketing and compliance with the law.

173. For these reasons, all applicable statutes of limitation have been

tolled by operation of the discovery rule with respect to claims as to the Polluting Vehicles.

B. Fraudulent concealment tolling

174. All applicable statutes of limitation have also been tolled by Ford's knowing and active fraudulent concealment and denial of the facts alleged herein throughout the period relevant to this action.

175. Instead of disclosing its emissions scheme, or that the quality and quantity of emissions from the Polluting Vehicles were far worse than represented, and of its disregard of the law, Ford falsely represented that the Polluting Vehicles had emissions cleaner than their gasoline-powered counterparts, complied with federal and state emissions standards, that the diesel engines were "clean," and that it was a reputable manufacturer whose representations could be trusted.

C. Estoppel

176. Ford was under a continuous duty to disclose to Plaintiff and the other Class members the true character, quality, and nature of emissions from the Polluting Vehicles and of those vehicles' emissions systems.

177. Ford knowingly, affirmatively, and actively concealed or recklessly disregarded the true nature, quality, and character of the emissions systems, and the emissions, of the Polluting Vehicles, and continues to do so. For example, in its 2016 Annual Report, Ford acknowledges the Volkswagen emissions scandal but

makes no disclosure of the emissions irregularities in its Polluting Vehicles.

178. Based on the foregoing, Ford is estopped from relying on any statutes of limitations in defense of this action.

VII. CLASS ALLEGATIONS

179. Plaintiff brings this action on behalf of herself and as a class action, pursuant to the provisions of Rules 23(a) and (b)(3) of the Federal Rules of Civil Procedure, on behalf of the following class (collectively, the “Nationwide RICO Class”):

All persons who purchased or leased a model year 2011– 2018 Ford F-250, F-350, or F-450 Super Duty vehicle.

180. Plaintiff also brings this action on behalf of herself and as a class action, pursuant to the provisions of Rules 23(a) and (b)(3) of the Federal Rules of Civil Procedure, on behalf of the following New Jersey state class (collectively, the “New Jersey Class”):

All persons in New Jersey who purchased or leased a model year 2011– 2018 Ford F-250, F-350, or F-450 Super Duty vehicle.

181. Excluded from the Classes are individuals who have personal injury claims resulting from the high emissions in the Polluting Vehicles. Also excluded from the Class are Ford and its subsidiaries and affiliates; all persons who make a timely election to be excluded from the Class; governmental entities; the Judge to whom this case is assigned and his/her immediate family; and Plaintiff’s counsel.

Plaintiff reserves the right to revise the Class definition based upon information learned through discovery.

182. Certification of Plaintiff's claims for class-wide treatment is appropriate because Plaintiff can prove the elements of their claims on a class-wide basis using the same evidence as would be used to prove those elements in individual actions alleging the same claim.

183. This action has been brought and may be properly maintained on behalf of the Class proposed herein under Federal Rule of Civil Procedure 23.

184. **Numerosity.** Federal Rule of Civil Procedure 23(a)(1): The members of the Class are so numerous and geographically dispersed that individual joinder of all Class members is impracticable. For purposes of this complaint, Plaintiff alleges that there are in excess of an estimated 500,000 or more vehicles in the Class. The precise number of Class members is unknown to Plaintiff but may be ascertained from Ford's books and records. Class members may be notified of the pendency of this action by recognized, Court-approved notice dissemination methods, which may include U.S. Mail, electronic mail, Internet postings, and/or published notice.

185. **Commonality and Predominance.** Federal Rule of Civil Procedure 23(a)(2) and 23(b)(3): This action involves common questions of law and fact, which predominate over any questions affecting individual Class members,

including, without limitation:

- a) Whether Ford and Bosch engaged in the conduct alleged herein;
- b) Whether Ford designed, advertised, marketed, distributed, leased, sold, or otherwise placed Polluting Vehicles into the stream of commerce in the United States;
- c) Whether the Ford engine system in the Polluting Vehicles emit pollutants at levels that do not make them “clean” diesels and that do not comply with EPA requirements;
- d) Whether Ford and Bosch omitted material facts about emissions, fuel economy, and towing capacity;
- e) Whether Ford and Bosch knew about the comparatively high emissions and, if so, how long Ford and Bosch have known;
- f) Whether Ford and Bosch designed, manufactured, marketed, and distributed Polluting Vehicles with defective or otherwise inadequate emission controls;
- g) Whether Ford and Bosch’s conduct violates RICO and consumer protection statutes, and constitutes breach of contract and fraudulent concealment, as asserted herein;
- h) Whether there is an Enterprise;
- i) Whether Bosch participated in the Enterprise;

- j) Whether Plaintiff and the other Class members overpaid for their vehicles at the point of sale; and
- k) Whether Plaintiff and the other Class members are entitled to damages and other monetary relief and, if so, in what amount.

186. **Typicality.** Federal Rule of Civil Procedure 23(a)(3): Plaintiff's claims are typical of the other Class members' claims because, among other things, all Class members were comparably injured through Ford's wrongful conduct as described above.

187. **Adequacy.** Federal Rule of Civil Procedure 23(a)(4): Plaintiff is an adequate Class representative because Plaintiff's interests do not conflict with the interests of the other members of the Classes they seek to represent; Plaintiff has retained counsel competent and experienced in complex class action litigation; and Plaintiff intends to prosecute this action vigorously. Plaintiff's counsel have previously worked on uncovering emissions misconduct, including doing so in the Volkswagen emissions case. The Classes' interests will be fairly and adequately protected by Plaintiff and her counsel.

188. **Superiority.** Federal Rule of Civil Procedure 23(b)(3): A class action is superior to any other available means for the fair and efficient adjudication of this controversy, and no unusual difficulties are likely to be encountered in the management of this class action. The damages or other financial detriment

suffered by Plaintiff and the other Class members are relatively small compared to the burden and expense that would be required to individually litigate their claims against Ford, so it would be impracticable for the members of the Classes to individually seek redress for Ford's wrongful conduct. Even if Class members could afford individual litigation, the court system could not. Individualized litigation creates a potential for inconsistent or contradictory judgments and increases the delay and expense to all parties and the court system. By contrast, the class action device presents far fewer management difficulties and provides the benefits of single adjudication, economy of scale, and comprehensive supervision by a single court.

VIII. CLAIMS

COUNT I

VIOLATIONS OF RACKETEER INFLUENCED AND CORRUPT ORGANIZATIONS ACT (RICO)

VIOLATION OF 18 U.S.C. § 1962 (C), (D)

[ON BEHALF OF A NATIONWIDE RICO CLASS]

189. Plaintiff incorporates by reference each preceding and succeeding paragraph as though fully set forth herein.

190. Plaintiff brings this Count individually and on behalf of the Nationwide RICO Class against Defendants Ford, Robert Bosch GmbH, and Robert Bosch LLC (collectively, "RICO Defendants").

191. The RICO Defendants are all "persons" under 18 U.S.C. § 1961(3)

because they are capable of holding, and do hold, “a legal or beneficial interest in property.”

192. Section 1962(c) makes it “unlawful for any person employed by or associated with any enterprise engaged in, or the activities of which affect, interstate or foreign commerce, to conduct or participate, directly or indirectly, in the conduct of such enterprise’s affairs through a pattern of racketeering activity.” Section 1962(d), in turn, makes it unlawful for “any person to conspire to violate.”

193. For many years now, the RICO Defendants have aggressively sought to increase the sales of Polluting Vehicles in an effort to bolster revenue, augment profits, and increase Ford’s share of the diesel truck market. Finding it impossible to achieve their goals lawfully, however, the RICO Defendants resorted instead to orchestrating a fraudulent scheme and conspiracy. In particular, the RICO Defendants, along with other entities and individuals, created and/or participated in the affairs of an illegal enterprise (“Super Duty Diesel Fraud Enterprise”) whose direct purpose was to deceive the regulators and the public into believing the Polluting Vehicles were “clean” and “environmentally friendly.” As explained in greater detail below, the RICO Defendants’ acts in furtherance of the Super Duty Diesel Fraud Enterprise violate Sections 1962(c) and (d).

1. The members of the Super Duty Diesel Fraud Enterprise

194. Upon information and belief, the Super Duty Diesel Fraud Enterprise

consisted of at least the following entities and individuals: Ford, Robert Bosch GmbH, and Robert Bosch LLC.

195. Robert Bosch GmbH and Robert Bosch LLC tested, manufactured, and sold the electronic control module (ECM) that managed the emission control system used by Ford in the Polluting Vehicles. This particular ECM is more formally referred to as the Electronic Diesel Control Unit 17.

196. Defendant Bosch GmbH is a multinational engineering and electronics company headquartered in Gerlingen, Germany, which has hundreds of subsidiaries and companies. It wholly owns defendant Bosch LLC, a Delaware limited liability company headquartered in Farmington Hills, Michigan. As explained above, Bosch's sectors and divisions are grouped by subject matter, not location. Mobility Solutions (formerly Automotive Technology) is the Bosch sector at issue, particularly its Diesel Services division, and it encompasses employees of Bosch GmbH and Bosch LLC. These individuals were responsible for the design, manufacture, development, customization, and supply of the defeat device to Ford for use in the Polluting Vehicles.

197. Bosch worked with Ford, Volkswagen, Mercedes, General Motors, and FCA to develop and implement a specific and unique set of software algorithms to surreptitiously evade emissions regulations. Bosch customized their EDC Unit 17s for installation in the Polluting Vehicles with unique software code

to detect when it was undergoing emissions testing, as described above, and did so for other vehicles with defeat devices in Volkswagen and Mercedes vehicles.⁴³

198. Bosch's conduct with respect to Volkswagen and other manufacturers, outlined below, adds plausibility to its participation in the enterprise described herein. For example, Bosch was well aware that the EDC Unit 17 would be used by automobile manufacturers, including Ford, to cheat on emissions testing. Bosch was also critical to the concealment of the defeat device in communications with U.S. regulators and went even further to actively lobby U.S. lawmakers on behalf of Volkswagen and its "clean diesel" vehicles.

199. EDC Unit 17 could not effectively lower NOx emissions to legal levels during normal operating conditions. In order to pass the emissions test, then, EDC Unit 17 is equipped with a "defeat device," which is software that allows the vehicle to determine whether it is being operated under normal conditions or testing conditions.

200. The EDC 17 ECU was manufactured by Bosch GmbH and sold to Ford. Bosch built the ECU hardware and developed the software running in the ECU. Bosch developed a "function sheet" that documents the functional behavior of a particular release of the ECU firmware. All function sheets used in the Ford

⁴³ Exhibit 21, Michael Taylor, EPA Investigating Bosch over VW Diesel Cheater Software, Car and Driver (Nov. 23, 2015), <https://www.caranddriver.com/news/epa-investigating-bosch-over-vw-diesel-cheater-software> (last visited July 30, 2018).

EDC, on information and belief, bear a “Robert Bosch GmbH” copyright.

201. As was publicly reported, the Bosch defendants, seeking to conceal their involvement in the unlawful Volkswagen Diesels, sent a letter to Volkswagen AG in 2007 stating that Volkswagen Diesels *could not be lawfully operated* if the LNT or SCR after-treatment system was disabled.⁴⁴ The exact same logic applies to the Ford Polluting Vehicles—i.e., they could not be lawfully operated with the defeat device.

202. Indeed, notwithstanding their knowledge that the Volkswagen Diesels could not be lawfully operated if the emissions system was disabled, the Bosch defendants, driven to cement their position as a leading supplier of diesel emissions equipment, went on to sell approximately eleven million EDC Unit 17s to Volkswagen over an eight-year period and sold hundreds of thousands of EDC units to Ford for use in Polluting Vehicles, as well as hundreds of thousands of units to Mercedes and FCA.⁴⁵

203. The persons and entities described in the preceding section are members of and constitute an “association-in-fact” enterprise.

204. At all relevant times, the Super Duty Diesel Fraud Enterprise: (a) had

⁴⁴ Exhibit 40, Stef Shrader, Feds Are Now Investigating Volkswagen Supplier Bosch Over Dieselgate, Jalopnik (Nov. 19, 2015), <http://jalopnik.com/feds-are-now-investigating-volkswagen-supplier-bosch-ov-1743624448>.

⁴⁵ Exhibit 21, Michael Taylor, EPA Investigating Bosch over VW Diesel Cheater Software, Car and Driver (Nov. 23, 2015), <http://blog.caranddriver.com/epa-investigating-bosch-over-vw-diesel-cheater-software/>.

an existence separate and distinct from each Defendant; (b) was separate and distinct from the pattern of racketeering in which the RICO Defendants engaged; and (c) was an ongoing organization consisting of legal entities, including Ford, the Bosch defendants, and other entities and individuals associated for the common purpose of designing, manufacturing, distributing, testing, and selling the Polluting Vehicles through fraudulent COCs and EOIs, false emissions tests, deceptive and misleading marketing and materials, and deriving profits and revenues from those activities. Each member of the Super Duty Diesel Fraud Enterprise shared in the bounty generated by the enterprise — *i.e.*, by sharing the benefit derived from increased sales revenue generated by the scheme to defraud consumers and franchise dealers alike nationwide.

205. The Super Duty Diesel Fraud Enterprise functioned by selling vehicles and component parts to the consuming public. Many of these products are legitimate, including vehicles that do not contain defeat devices and software capable of allowing the engine to manipulate the software such that the emissions system is turned on or off at certain times. However, the RICO Defendants and their co-conspirators, through their illegal Enterprise, engaged in a pattern of racketeering activity, which involves a fraudulent scheme to increase revenue for Defendants and the other entities and individuals associated-in-fact with the Enterprise's activities through the illegal scheme to sell the Polluting Vehicles.

206. The Super Duty Diesel Fraud Enterprise engaged in and its activities affected interstate and foreign commerce because it involved commercial activities across state boundaries, such as the marketing, promotion, advertisement and sale or lease of the Polluting Vehicles throughout the country and the receipt of monies from the sale of the same.

207. Within the Super Duty Diesel Fraud Enterprise, there was a common communication network by which co-conspirators shared information on a regular basis. The Super Duty Diesel Fraud Enterprise used this common communication network for the purpose of manufacturing, marketing, testing, and selling the Polluting Vehicles to the general public nationwide.

208. Each participant in the Super Duty Diesel Fraud Enterprise had a systematic linkage to each other through corporate ties, contractual relationships, financial ties, and continuing coordination of activities. Through the Super Duty Diesel Fraud Enterprise, the RICO Defendants functioned as a continuing unit with the purpose of furthering the illegal scheme and their common purposes of increasing their revenues and market share, and minimizing losses.

209. The RICO Defendants participated in the operation and management of the Super Duty Diesel Fraud Enterprise by directing its affairs, as described herein. While the RICO Defendants participated in, and are members of, the enterprise, they have a separate existence from the enterprise, including distinct

legal statuses, different offices and roles, bank accounts, officers, directors, employees, individual personhood, reporting requirements, and financial statements.

210. Ford exerted substantial control and participated in the affairs of the Super Duty Diesel Fraud Enterprise by:

- a. Designing in conjunction with Robert Bosch GmbH the Polluting Vehicles with defeat devices;
- b. Failing to correct or disable the defeat devices;
- c. Manufacturing, distributing, and selling the Polluting Vehicles that emitted greater pollution than allowable under the applicable regulations;
- d. Misrepresenting and omitting (or causing such misrepresentations and omissions to be made) vehicle specifications on COC and EO applications;
- e. Introducing the Polluting Vehicles into the stream of U.S. commerce without a valid COC and/or EO;
- f. Concealing the existence of the defeat devices and the unlawfully high emissions from regulators and the public;
- g. Persisting in the manufacturing, distribution, and sale of the Polluting Vehicles even after questions were raised about the emissions testing and discrepancies concerning the same;
- h. Misleading government regulators as to the nature of the defeat devices and the defects in the Polluting Vehicles;

- i. Misleading the driving public as to the nature of the defeat devices and the defects in the Polluting Vehicles;
- j. Designing and distributing marketing materials that misrepresented and concealed the defects in the vehicles;
- k. Otherwise misrepresenting or concealing the defective nature of the Polluting Vehicles from the public and regulators; and
- l. Illegally selling and/or distributing the Polluting Vehicles; collecting revenues and profits from the sale of such products; and ensuring that the other RICO Defendants and unnamed co-conspirators complied with the fraudulent scheme.

211. Bosch also participated in, operated, and/or directed the Super Duty Diesel Fraud Enterprise. Bosch participated in the fraudulent scheme by manufacturing, installing, testing, modifying, and supplying the EDC Unit 17 which operated as a “defeat device” in the Polluting Vehicles. Bosch exercised tight control over the coding and other aspects of the defeat device software and closely collaborated with Ford to develop, customize, and calibrate the defeat devices. Additionally, Bosch continuously cooperated with Ford to ensure that the EDC Unit 17 was fully integrated into the Polluting Vehicles. Bosch also participated in the affairs of the Enterprise by concealing the defeat devices on U.S. documentation and in communications with U.S. regulators. Bosch collected tens of millions of dollars in revenues and profits from the hidden defeat devices

installed in the Polluting Vehicles.

212. Without the RICO Defendants' willing participation, including Bosch's active involvement in developing and supplying the critical defeat devices for the Polluting Vehicles, the Super Duty Diesel Fraud Enterprise's scheme and common course of conduct would not have been successful.

213. The RICO Defendants directed and controlled the ongoing organization necessary to implement the scheme at meetings and through communications of which Plaintiff cannot fully know at present because such information lies in the Defendants' and others' hands.

214. The members of the Super Duty Diesel Fraud Enterprise all served a common purpose; namely, to outsell their law-abiding competitors and increase their revenues through the sale of as many Polluting Vehicles (including the emissions components made and sold by Bosch) as possible. Each member of the Super Duty Diesel Fraud Enterprise shared the bounty generated by the enterprise — *i.e.*, by sharing the benefit derived from increased sales revenue generated by the scheme to defraud. Ford sold more Polluting Vehicles by utilizing an emission control system that was cheaper to install and allowed for generous performance and efficiency tuning, all while charging consumers a premium for purportedly “clean” and “fuel efficient” Polluting Vehicles. The Bosch defendants, in turn, sold more EDC Units because Ford manufactured and sold more Polluting Vehicles.

The RICO Defendants achieved their common purpose by repeatedly misrepresenting and concealing the nature of the Polluting Vehicles and the ability of the emission control systems (including the Bosch-supplied parts) to effectively reduce toxic emissions during normal operating conditions.

215. The RICO Defendants continued their enterprise even after the Volkswagen scandal became public in September 2015. Ford continued to manufacture and sell 2016 Polluting Vehicles. Assuming top executives at Ford did not know of the defeat devices in its vehicles (an assumption not true of Volkswagen or Bosch), a responsible chief executive would have inquired: Do we have a diesel problem? Either top executives at Ford failed to ask questions or they agreed to continue a cover-up because Ford did not stop selling Polluting Vehicles and has continued to conceal the truth.

216. In fact, Ford acknowledged in its 2016 Annual Report the U.S. enforcement action against Volkswagen and that “The emergence of this issue has led to increased scrutiny of automaker emission testing by regulators around the world....”⁴⁶ Ford, despite this acknowledgement, continues to conceal the emissions issue with respect to the Polluting Vehicles.

2. The predicate acts

⁴⁶ Exhibit 41, Ford 2016 Annual Report at p. 14, available at http://s22.q4cdn.com/857684434/files/doc_financials/2016/annual/2016-annual-report.pdf (last visited on July 30, 2018).

217. To carry out, or attempt to carry out, the scheme to defraud, the RICO Defendants conducted or participated in the conduct of the affairs of the Super Duty Diesel Fraud Enterprise through a pattern of racketeering activity that employed the use of mail and wire facilities, in violation of 18 U.S.C. §§ 1341 (mail fraud) and 1343 (wire fraud).

218. Specifically, the RICO Defendants participated in the scheme to defraud by using mail, telephone, and the Internet to transmit writings travelling in interstate or foreign commerce.

219. The RICO Defendants' use of the mails and wires include but are not limited to the transmission, delivery, or shipment of the following by the RICO Defendants or third parties that were foreseeably caused to be sent as a result of Defendants' illegal scheme:

- a. Application for certificates submitted to the EPA and CARB;
- b. The Polluting Vehicles themselves;
- c. Component parts for the defeat devices;
- d. Essential hardware for the Polluting Vehicles;
- e. Falsified emission tests;
- f. Fraudulently-obtained COCs and EO's;
- g. Vehicle registrations and plates as a result of the fraudulently-obtained COCs and EO's;

- h. Documents and communications that facilitated the falsified emission tests;
- i. False or misleading communications intended to lull the public and regulators from discovering the defeat devices and/or other auxiliary devices;
- j. Sales and marketing materials, including advertising, websites, product packaging, brochures, and labeling, which misrepresented and concealed the true nature of the Polluting Vehicles;
- k. Documents intended to facilitate the manufacture and sale of the Polluting Vehicles, including bills of lading, invoices, shipping records, reports and correspondence;
- l. Documents to process and receive payment for the Polluting Vehicles by unsuspecting franchise dealers, including invoices and receipts;
- m. Payments to Bosch;
- n. Deposits of proceeds;
- o. SEC filings where Ford has failed to disclose the scheme and has continued to do so post the Volkswagen scandal; and
- p. Other documents and things, including electronic communications.

220. The RICO Defendants, in furtherance of their scheme, used the wires and mails to apply for, or submit revisions to, certificates of compliance with the Clean Air Act of 1990. The RICO Defendants used the mails on at least the following dates for this purpose on May 21, 2015; September 28, 2012; April 21,

2011; August 22, 2012; February 25, 2014; April 21, 2015; and May 15, 2013.

221. As part of the operation of the Enterprise, Ford received from the EPA through the U.S. Mail, Certificates Of Conformity With the Clean Air Act of 1990. These Certificates were issued on February 11, 2010; June 28, 2011; October 15, 2012; July 20, 2013; February 26, 2014; and May 21, 2015.

222. The RICO Defendants utilized the interstate and international mail and wires for the purpose of obtaining money or property by means of the omissions, false pretense, and misrepresentations described therein.

223. The RICO Defendants also used the Internet and other electronic facilities to carry out the scheme and conceal the ongoing fraudulent activities. Specifically, Ford made misrepresentations about the Polluting Vehicles on Ford websites, YouTube, and through ads online, all of which were intended to mislead regulators and the public about the fuel efficiency, emissions standards, and other performance metrics.

224. The RICO Defendants also communicated by U.S. Mail, by interstate facsimile, and by interstate electronic mail with various other affiliates, regional offices, divisions, dealerships, and other third-party entities in furtherance of the scheme.

225. The mail and wire transmissions described herein were made in furtherance of the RICO Defendants' scheme and common course of conduct to

deceive regulators and consumers and lure consumers into purchasing the Polluting Vehicles, which the RICO Defendants knew or recklessly disregarded as emitting illegal amounts of pollution, despite their advertising campaign that the Polluting Vehicles were “clean” diesel vehicles or vehicles with a “remarkable reduction in emission.”

226. Many of the precise dates of the fraudulent uses of U.S. Mail and interstate wire facilities have been deliberately hidden and cannot be alleged without access to the RICO Defendants’ books and records. However, Plaintiff has described the types of, and in some instances, occasions on which the predicate acts of mail and/or wire fraud occurred. They include thousands of communications to perpetuate and maintain the scheme, including the things and documents described in the preceding paragraphs.

227. The RICO Defendants have not undertaken the practices described herein in isolation, but as part of a common scheme and conspiracy. In violation of 18 U.S.C. § 1962(d), the RICO Defendants conspired to violate 18 U.S.C. § 1962(c), as described herein. Various other persons, firms, and corporations, including third-party entities and individuals not named as defendants in this Complaint, have participated as co-conspirators with the RICO Defendants in these offenses and have performed acts in furtherance of the conspiracy to increase or maintain revenues, increase market share, and/or minimize losses for the RICO

Defendants and their unnamed co-conspirators throughout the illegal scheme and common course of conduct.

228. The RICO Defendants aided and abetted others in the violations of the above laws, thereby rendering them indictable as principals in the 18 U.S.C. §§ 1341 and 1343 offenses.

229. To achieve their common goals, the RICO Defendants hid from the general public the unlawfulness and emission dangers of the Polluting Vehicles and obfuscated the true nature of the defect even after regulators raised concerns. The RICO Defendants suppressed and/or ignored warnings from third parties, whistleblowers, and governmental entities about the discrepancies in emissions testing and the defeat devices present in the Polluting Vehicles.

230. The RICO Defendants and each member of the conspiracy, with knowledge and intent, have agreed to the overall objectives of the conspiracy and participated in the common course of conduct to commit acts of fraud and indecency in designing, manufacturing, distributing, marketing, testing, and/or selling the Polluting Vehicles (and the defeat devices contained therein).

231. Indeed, for the conspiracy to succeed, each of the RICO Defendants and their co-conspirators had to agree to implement and use the similar devices and fraudulent tactics —specifically, complete secrecy about the defeat devices in the Polluting Vehicles.

232. The RICO Defendants knew and intended that government regulators, as well as Plaintiff and Class members, would rely on the material misrepresentations and omissions made by them about the Polluting Vehicles. The RICO Defendants knew and intended that Plaintiff and the Class would incur costs and damages as a result. As fully alleged herein, Plaintiff and the Class relied upon Defendants' representations and omissions that were made or caused by them. Plaintiff's reliance is made obvious by the fact that: (1) they purchased hundreds of thousands of vehicles that never should have been introduced into the U.S. stream of commerce and whose worth is far less than what was paid. In addition, the EPA, CARB, and other regulators relied on the misrepresentations and material omissions made or caused to be made by the RICO Defendants; otherwise, Ford could not have obtained valid COCs and EOs to sell the Polluting Vehicles.

233. The RICO Defendants' conduct in furtherance of this scheme was intentional. Plaintiff and the Class were harmed as a result of the RICO Defendants' intentional conduct. Plaintiff, the Class, regulators, and consumers, among others, relied on the RICO Defendants' material misrepresentations and omissions.

234. As described herein, the RICO Defendants engaged in a pattern of related and continuous predicate acts for many years. The predicate acts constituted a variety of unlawful activities, each conducted with the common

purpose of defrauding Plaintiff and other Class members and obtaining significant monies and revenues from them and through them while providing Polluting Vehicles worth significantly less than the invoice price paid. The predicate acts also had the same or similar results, participants, victims, and methods of commission. The predicate acts were related and not isolated events.

235. The predicate acts all had the purpose of generating significant revenue and profits for the RICO Defendants at the expense of Plaintiff, the Class, and consumers. The predicate acts were committed or caused to be committed by the RICO Defendants through their participation in the Super Duty Diesel Fraud Enterprise and in furtherance of its fraudulent scheme, and were interrelated in that they involved obtaining Plaintiff's and Class members' funds, artificially inflating the brand and dealership goodwill values, and avoiding the expenses associated with remediating the Polluting Vehicles.

236. During the design, manufacture, testing, marketing, and sale of the Polluting Vehicles, the RICO Defendants shared technical, marketing, and financial information that plainly revealed the emission control systems in the Polluting Vehicles as the ineffective, illegal, and fraudulent piece of technology they were and are. Nevertheless, the RICO Defendants shared and disseminated information that deliberately represented Polluting Vehicles as "cleanest super diesel ever," "most tested power stroke diesel engine ever," and "having

‘Enhanced Tow/Haul mode.’”

237. By reason of and as a result of the conduct of the RICO Defendants, and in particular its pattern of racketeering activity, Plaintiff and the Class have been injured in multiple ways, including but not limited to:

- a. Overpayment for Polluting Vehicles, in that Plaintiff and the Class at the time of purchase believed they were paying for vehicles that met certain emission and fuel efficiency standards and obtained vehicles that did not meet these standards and were worth less than what was paid;
- b. Plaintiff has been wrongfully deprived of her property in that the price for their vehicles was artificially inflated by deliberate acts of false statements, omissions and concealment and by the RICO Defendants’ acts of racketeering.

238. The RICO Defendants’ violations of 18 U.S.C. § 1962(c) and (d) have directly and proximately caused injuries and damages to Plaintiff and the Class, and Plaintiff and the Class are entitled to bring this action for three times their actual damages, as well as injunctive/equitable relief, costs, and reasonable attorneys’ fees pursuant to 18 U.S.C. § 1964(c). Each of the RICO Defendants knew, understood, and intended for members of the Class to purchase the Polluting Vehicles, and knew, understood, and foresaw that revelation of the truth would injure members of the Class.

COUNT II

VIOLATIONS OF NEW JERSEY CONSUMER FRAUD ACT (N.J. STAT. ANN. 56:8-1, ET SEQ.) [ON BEHALF OF A NEW JERSEY STATE CLASS]

239. Plaintiff hereby incorporates by reference the allegations contained in the preceding paragraphs of this complaint.

240. This claim is brought by Plaintiff on behalf of New Jersey purchasers who are members of the New Jersey Class.

241. The New Jersey Consumer Fraud Act (New Jersey CFA) makes unlawful “[t]he act, use or employment by any person of any unconscionable commercial practice, deception, fraud, false pretense, false promise, misrepresentation, or the knowing concealment, suppression or omission of any material fact with the intent that others rely upon such concealment, suppression or omission, in connection with the sale or advertisement of any merchandise or real estate, or with the subsequent performance of such person as aforesaid, whether or not any person has in fact been misled, deceived or damaged thereby.” N.J. STAT. ANN. § 56:8-2. Ford failed to disclose that the Super Duty vehicles (1) turn off or down emissions systems during common driving conditions resulting in massive amounts of NOx as compared to federal and state standards, (2) that absent the emissions manipulation these vehicles would not have passed emissions tests, (3) that fuel economy and towing capacity was achieved by turning down or off

emissions systems; and (4) that emissions and fuel economy were far worse than a reasonable consumer would expect given the premium paid for these vehicles over a comparable gas powered vehicle.

242. Ford, Plaintiff, and New Jersey Class members are “persons” within the meaning of N.J. STAT. ANN. § 56:8-1(d).

243. Ford engaged in “sales” of “merchandise” within the meaning of N.J. STAT. ANN. § 56:8-1(c), (d).

244. As a result of the foregoing omissions, misrepresentations, acts, and practices, Plaintiff has suffered an ascertainable loss and is entitled to recover legal and/or equitable relief, including an order enjoining Ford’s unlawful conduct, treble damages, costs, and reasonable attorneys’ fees pursuant to N.J. STAT. ANN. § 56:8-19, and any other just and appropriate relief.

COUNT III

FRAUD BY CONCEALMENT (New Jersey Common Law) [ON BEHALF OF A NEW JERSEY STATE CLASS]

245. Plaintiff incorporates by reference all preceding allegations as though fully set forth herein.

246. Plaintiff brings this claim on behalf of the New Jersey purchasers who are members of the New Jersey Class.

247. Ford intentionally concealed the true amount and characteristics of the

emissions in the Polluting Vehicles.

248. Ford further affirmatively misrepresented to Plaintiff in advertising and other forms of communication, including standard and uniform material provided with each car and on its website, the true performance and emissions in the Polluting Vehicles.

249. Ford knew the truth when these representations were made.

250. Ford had a duty to disclose the truth. Plaintiff and the other Class members relied on Ford's material representations.

251. The truth about the emissions system was known only to Ford; Plaintiff and the other Class members did not know of these facts and Ford actively concealed these facts from Plaintiff and the other Class members.

252. Plaintiff and the other Class members reasonably relied upon Ford's deception. They had no way of knowing that Ford's representations were false, misleading, or incomplete. As consumers, Plaintiff and the other Class members did not, and could not, unravel Ford's deception on their own. Rather, Ford intended to deceive Plaintiff and the other Class members by concealing the true facts about the Polluting Vehicles.

253. Ford's false representations and omissions and/or misrepresentations were material to consumers because they concerned qualities of the Polluting Vehicles that played a significant role in the value of the vehicles.

254. Plaintiff and the other Class members were unaware of the omitted material facts referenced herein and they would not have acted as they did if they had known of the concealed and/or suppressed facts, in that they would not have purchased or paid as much for these vehicles. Plaintiff's and the other Class members' actions were justified. Ford was in exclusive and/or superior control of the material facts, and such facts were not generally known to the public, Plaintiff, or other Class members.

255. Because of the concealment and/or suppression of facts, Plaintiff and the other Class members sustained damage because they overpaid at the time of purchase.

256. The value of Plaintiff's and the other Class members' vehicles has diminished as a result of Ford's fraudulent concealment.

257. Accordingly, Ford is liable to Plaintiff and the other Class members for damages in an amount to be proven at trial.

258. Ford's acts were done wantonly, maliciously, oppressively, deliberately, with intent to defraud, and in reckless disregard of Plaintiff's and other Class members' rights and the representations that Ford made to them, in order to enrich Ford. Ford's conduct warrants an assessment of punitive damages in an amount sufficient to deter such conduct in the future, which amount is to be determined according to proof.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff, individually and on behalf of members of the Nationwide RICO Class and New Jersey Class, respectfully requests that the Court enter judgment in Plaintiff's favor and against Defendants, as follows:

- A. For an order certifying the proposed Nationwide RICO Class and New Jersey Class, appointing Plaintiff as representative of the Class, and designating the undersigned as Class Counsel;
- B. Restitution, including at the election of Class members, recovery of the purchase price of their Polluting Vehicles, or the overpayment of diminution in value of their Polluting Vehicles;
- C. Compensatory and/or statutory damages, including punitive damages, costs, and disgorgement in an amount to be determined at trial;
- D. For payment of costs of suit herein incurred;
- E. For both pre-judgment and post-judgment interest on any amounts awarded;
- F. For payment of reasonable attorneys' fees, expert fees, and expenses, as may be allowable under applicable law; and
- G. For such other and further relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

Plaintiff, individually and on behalf of the Classes, demands a trial by jury as to all issues so triable.

DATE: July 31, 2018

BY: /s/ E. Powell Miller

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